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ABSTRACT

In Israel, efforts to narrow the cognitive and social gap between pupils have been directed toward integration through structural changes in the educational system, along with expected changes in the educational process. This study analyzes the relationships between the school climate and the different educational outcomes for students in various class situations. The study is based on analysis of data from a Junior High School study which was aimed at evaluating the reform in the Israeli educational system, and the conclusions of a case study of five integrated junior high schools in Israel. The ethnic composition of the classes studied varied due to the specific demographic situation in each area, to the location, and to individual school policy. It was hypothesized that school climate may have a differential effect for different types of classes, according to their composition and grade. On a school level analysis, two distinctive climates were revealed: an achievement-conservative one and an integrative-open one. The type of climate was related to various student variables, such as achievement, aspirations, locus of control, self image, and anxiety. Results showed that classes are differentially sensitive to the effects of school climate, according to their ethnic composition. Also, in analyzing "extreme school climate situations," the potential impact of school climate was found to be quite consistent. It is suggested that school climate is a dynamic phenomenon, changing through an interactive process, having different effects on different classes and with different situations. (Author/AOS)

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LEARNING OF THE DISADVANTAGED AND SCHOOL CLIMATE

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THE NCJW RESEARCH INSTITUTE FOR INNOVATION IN EDUCATION

The NCJW Research Institute for Innovation in Education was established in 1968 by The National Council of Jewish Women, U.S.A. at the School of Education of the Hebrew University of Jerusalem.

The Institute was established with the goal of undertaking research and carrying out new experimental programs in the area of the educational nurturing of the weaker segments of Israel's population. Through a wide range of research and applied activities, the Institute aims to confront the special educational problems and needs of children and youth from these strata in the population so as to promote their educational and social advancement. It attempts to give them the opportunity to develop their potential to attain social mobility and to participate on equal terms in Israeli society.

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Abstract

In Israel, efforts to narrow the cognitive and social gap between pupils have been directed towards integration through structural changes in the educational system, along with expected changes in the educational process. Since school climate is one indicator of the educational process, it is particularly important in the context of the integrated school. Hence, the main purpose of this study is to analyze the relationships between the "school climate" and the different educational outcomes for students in various class compositions, i.e., various integrational situations.

The findings reported are based on a secondary analysis of data from the Junior High School Study, which was aimed at evaluating the reform in the Israeli educational system (Chen, Lewy and Adler, 1978). It also draws on the conclusions of a case study of five integrated junior high schools (Resh, Adler and Inbar, 1980).

Although the analysis was initially carried out on the individual level, this analysis takes schools and classes as a unit of analysis. The ethnic composition of the classes themselves varies, due both to the specific demographic situation in each area, location, and to individual school policy. Our main hypothesis was that school climate may have a differential effect for different types of classes according to their composition and grade.

On the school level analysis an SSA based on teachers' variables revealed the development of two distinctive climates: an achievement-conservative one and an integrative-open one. The type of climate was related to various students' variables, such as achievement, locus of control, aspirations and anxiety. Similarly, results can be observed on class level SSA.

Analysis of variance reveals a differential association between students' variables, class composition and class grade. Regression analyses were carried out on classes' attitudinal variables: aspirations, plans for high school, locus of control, self-image and anxiety.

Here findings suggest that classes are differently sensitive to the effects of school climate, according to their ethnic composition. Furthermore, in analyzing "extreme school climate situations" the potential impact of school climate was found to be quite consistent.

The study reveals enough evidence to show the importance of school climate for educational outcomes of students. But the important point is that the school climate has a different effect according to the different situations as elaborated in the study. This might explain the general, vague outcomes of climate effects when dealt with without such differentiation. Hence, research on school climate must be based on the assumption that climate is a dynamic phenomenon, changing through an interactive process, has different effects on different classes and has different effects in different situations.

Introduction

Although learning is a function of individual effort in the school system, it cannot be treated as a separate phenomenon detached from the atmosphere of the whole school. This holds particularly true for the disadvantaged. Here, the teacher's attitude, peer group behavior and school policy in general may turn out to be vitally important components in the learning process. Although school climate is fundamental to educational research, it is highly perplexing. A survey of the literature clearly reveals that no common conceptual framework or classification of school climate has yet emerged. Each researcher has developed his own concept and definition of the phenomenon. Yet essentially, they refer to the same thing: the interrelationships between the individual and the sets of attributes of the environmental [illegible] in which he functions.

In Israel, efforts towards narrowing the cognitive and social gap between pupils have been directed towards integration through structural changes in the educational system, as well as through changes in the educational process. School climate, as an indicator in the educational process, is particularly important in the context of the integrated school. Hence, the main purpose of this study is to analyze the relationships between the "school climate" and the different educational outcomes for students in various class compositions, i.e. various integrational situations.

In doing so, we may also enrich our understanding of the complex phenomenon of social climate and its possible differential influence on educational outcomes in various class contexts. Even though the study is based on data from the Israeli educational system, the findings may have more general implications.

The findings reported are based on a secondary analysis of data from the Junior High School Study, which was aimed at evaluating the reform in the Israeli educational system (Chen, Lewy and Adler, 1978).

It also draws on the conclusions of a case study of five integrated junior high schools (Resh, Adler and Inbar, 1980). Originally, it was planned to also reanalyze another data base of a study in the Israeli elementary school (Minkovitz, Davis and Bashi, 1977). Complex technical problems with the data undermined this intention and we reanalyzed only the reform study data.

Secondary analyses typically involve "the reanalysis of data for the purpose of answering the original research questions with better statistical techniques, or answering new questions with old data" (Glass, 1976, p.3). The analysis summarized below refers mainly to the second part of Glass' definition. Hence, this study is not a reanalysis of the major questions of the first study, or a re-examination of a previously arrived at conclusion. Rather, this study can be seen as the inductive process which evolved new hypotheses for future studies.

As a secondary analysis, the study is limited by the boundaries of the existing data and their accessibility. It turns out that reanalysis of a composite and complicated concept such as school climate creates severe problems when the whole study design and its variables were not built in the first phase for this purpose.

Although we had a large number of students and teachers in the original sample, the number of schools was small (N=19), which was a major limitation. The statistical base for the analysis was much improved when based on classes (N=105).

The findings in this study suggest new possible avenues of investigation and hypotheses which seem worthwhile following about the relationships between school climate and educational outcomes for classes.

One could not expect to find strong and unequivocal effects of climate on any educational outcome: the decisive impact of personal resources relative to school resources on students' outcomes and the complexity of school climate indices make this unachievable. Yet, the

emergence of consistent patterns of interrelationships might shed light on the learning process, on the one hand, and encourage further studies in this direction, on the other.

The main purpose of the study was to analyze patterns of relationships between school climate, as defined by school policy and teachers' attributes and attitudes, and educational outcomes for classes. Guided by the notion that these interrelationships may be differential for various types of classes, we ran the analyses separately for the three grade levels (7th, 8th and 9th) and in three types of class compositions.

The report may seem at times to be quite technical and detailed, even redundant. However, since we are suggesting new ways of conceptualization and analysis, we preferred not to limit ourselves just to the bottom lines, but rather to present all the stages of our deliberations.

The report is based on several stages. First is an analysis of the climate concept and a theoretical discussion of several newly suggested climate characteristics which should be considered in future studies. In the second stage, analysis on the school level reveals the creation of two distinctive climates in the junior high schools. The third stage includes a whole series of analyses on the class level investigating the associations between school climate variables and classes' achievement and motivational variables. As mentioned above, this was done separately on three class levels and three types of class composition. In the fourth stage we developed a new avenue of analysis. Here, the associations between climate and students' variables were analyzed in four categories of extreme school climates. In the fifth stage the analysis concentrated on the possible impact of the relative class position in the school on students' attitudes.

In conclusion, a summary of the major outcomes and a discussion of their main implications is presented.

Part I

Theoretical Discussion: Review, Analysis and Development of New Perspectives

Chapter 1: Overview and Analysis*

1) The Concept of School Climate

An analysis of school climate is an attempt to configurate variables into a tangible concept. The importance of analyzing the climate phenomenon is widely recognised (Boocock 1966, Shaycroft 1967, Dyer 1968, McDill, Rigsby and Meyers 1969, Johnson 1970, Walberg 1966).

Although climate is a fundamental concept of social science, it is a highly perplexing one, and a survey of the literature clearly reveals that no common conceptual framework has yet emerged. Each researcher has developed his own definition and variables' specification, although the underlying conceptual framework referred to is the same: the relationships between the individual and the sets of attributes of the environmental unit in which he functions.

2) Definitions

An overview of the literature clearly reveals the ambiguous definition of the climate phenomena.

Brookover (1978, p.302): "The school social climate encompasses a composite of variables as defined and perceived by the members of this group. These factors may be broadly conceived as the norms of the social system and expectations held for various members as perceived by the mem-

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* We are grateful to Mrs. Hana Dvir for her help in completing this chapter.

bers of the group and communicated to members of the group."

Johnson (1970, p.231): "Each school has its own climate, which in turn is made up of a whole spectrum of more or less recognizable subcultures affecting student behavior and performance. The climate of an organization is a combination of all the organizational factors and of all the personality characteristics of the members of the organization."

Boyle (1965, p.232) conceptualized climates as "consisting of both structural characteristics of the school and the characteristics of the students."

Backman (1969, p.232): "... three factors define the climate:

a) The personality characteristics, abilities, motives, values, career and educational plans and past experiences of the entering students.

b) The norms, values, role requirements and other characteristics of the school itself.

c) The values and norms of the informal organization within the school, that is the traditions and collective feelings passed from one generation of students to another."

Walberg (1966, p.240) conceptualized classroom climate as consisting of both structural and affective dimensions. The structural dimension refers to the role expectations for the student of the teachers and other school personnel. The affective dimension pertains to "the idiosyncratic personal dispositions of the students to act in given ways to satisfy their individual personality needs...".

The common denominator of the various definitions is the perception of climate as a cluster of variables, without determining exactly which variables, or what interrelationships are among them. This weakness implies that almost any variable related to school may pertain to climate.

3) Overview

Studies of organizational climates can be found as far back as the 1940s, although most of them treated the idea indirectly. The [illegible] research on school climate which emerged since the early 60s has enriched significantly the knowledge and understanding of school climate. Still, it seems as though we have reached a point where a breakthrough, conceptual as well as empirical, is greatly needed.

The following (Table 1) is an attempt to summarize most of the school climate studies. This classification is based on an input orientation, in which the studies are classified according to the three main groups of input variables: student characteristics, school-staff characteristics, and the school milieu. Essentially it is a chronological list, but studies are grouped together when they use similar variables and the main emphasis of the climate variables is described. The table clearly reveals the wide-spread use of different variables and concepts, and the continuous effort to identify climate characteristics.

Table 1: Classification of School Climate Studies*

Emphasis	Researcher	Year
Students' characteristics		
Scholastic orientation or scholastic ability	Coleman	1961
	Boyle	1965
Majority influence, norms and values	Astin and Holland	1961
	Coleman	1965
Peer groups and normative groups	McDill	1973
S.E.S. (socio-economic status)	McDill	1968
	St. John	1975
	Alexander	1979

*After completing this table, a similar analysis was published (Anderson 1982).

Emphasis	Researcher	Year
Tradition and collective feelings	Secord	1964
Degree of group cohesiveness	Schmuck	1966
Individual emotional factors	Johnson	1970
Individual choice	Heist	1961
Feeling of helplessness, and fate control	Battle	1963
Racial composition	Brookover	1978
	Chen, Lewy and Adler	1978
Behavioral categories like: friction, difficulty, satisfaction, cohesiveness, compliance, attention, volunteering, play, and non-attendance	Sheehan	1978
	Hoge	1979
Factors based on attitudes towards other peer groups, toward teachers, school; relation to friends, to educational aims; anxiety, aspiration, and self-image.	Chen, Lewy and Adler	1978
Staff characteristics		
Professional background, teachers' motivation and performance	Waller	1932
Teachers/parents relationships: interrelationships of the staff and the teachers' point of view and attitude toward children, teachers' psycho-physic environment	Sharp and Green	1975
Teachers' conformity as a reward system	Weiyne	1957
Teachers' attitudes toward work and image of principal's behavior	Halpin	1963
Estimation of teachers' ability and professional background	Coleman	1966
Teachers' personal characteristics	Carson	1978
Teachers' rules toward children's conduct	Walberg and Anderson	1968
Teachers' organizational task defined by authoritative and democratic behavior	Bossert	1977

Emphasis	Researcher	Year
Teachers' and principals' perception of needs	Minkovitz et al.	1977
Factor based on the relation between students' and teachers' perceptions	Sheehan	1978
Staff relationships, role image, teachers' satisfaction, optimism, perception of educational approaches	Chen, Lewy and Adler	1978
Relating structural model of school teacher variables to student learning outcomes	Centran and Potter	1980
Educational Milieu		
Ecological and psychological environment		
Size of school, city, metropolitan district, big or small communities. School location.	Street Boyle Miles Swan Chen, Lewy and Adler	1962 1965 1970 1974 1978
The public image of the school	Astin Webster et al.	1961 1962
Relation between school size and different kinds of leadership and extra-curricular activities	Barker	1964
Level of equipment and sources, learning facilities and equipment, financial dependence	Minkovitz et al. Coleman	1977 1966
"Cultural Hero"	Knapp	1953
School intellectual criterion	Davis	1963
School pressure for learning and achievement	Thistlethwaite	1966
Institutional compliance system	Boyle	1965
The school spirit	Mitchel	1968
School's degree of selectivity, methods of learning	Chen, Lewy and Adler	1978
Class structure and class composition	Chen, Lewy and Adler Weinstein	1978 1979
School Saga	Boldridge	1975

4) Approaches

Structure and phenomenology are two basic, distinct research approaches when studying human behavior. The first relates to the objective aspects of the phenomena of behavior; the latter to its subjective meanings. Relating these approaches to the study of school climate, the structural approach tries to identify and analyze school variables as objective entities. In that case, structural variables such as school size, class size, school/class composition, teachers' education or years of experience will be independent variables whose relationships with, or effects on any educational outcomes will be analyzed. Undoubtedly, many of the structural, so-called objective variables are, indeed, functions of school policy, which in turn represent principal or staff values, attitudes, and approaches.

In the phenomenological approach, variables are not viewed as objective entities, but rather as subjective ones. The theoretical basis for such an approach is derived from the assumption that peoples' behavior is more a function of their perception about reality than of the objective situation itself. Obviously, in this case, there is no way, even theoretically, to develop a causal relationship between independent and dependent variables. The relationship between them is interactive.

The importance of the distinction between the two approaches is two-fold: theoretical and empirical. Theoretically, each of the approaches assumes, a priori, different relationships between the independent and the dependent variables. If, in the former approach, a uni-directional relation is assumed, in the latter the very distinction between dependent and independent variables is essentially arbitrary. Empirically, in the objective approach, an attempt will be made to gather objective data, and when that is difficult or impossible, data will be based on professional assessments. In the subjective approach, the subjective perception will be the essential data.

To give a small example: when the first approach is used the number of accounted conflicts will be the indicator for staff-tension, while in the second approach, teachers' perception of staff relationships will be the indicator. There is nothing "right" or "wrong" about these two approaches. Both could and should be used, and in a simultaneous information gathering the objective one may enlighten the inner validity of the subjective. Indeed, both approaches were used, although, often in a mixed manner, or even with combined indices, without enough attention being paid to their different implications. Table 2 summarizes school climate studies according to the two approaches and within four categories which were found to be the most common in the various studies: the physical-structural category; the category dealing with the realm of value systems and goal-orientation; the category dealing with role behavior; and the category referring to the state of feelings, the affective category. Obviously, these categories are not mutually exclusive, and their distinction is more for practical purposes than of theoretical importance. However, the combined classification of approaches and categories elucidates the different orientations revealed in climate studies and may help in developing the school climate concept.

Table 2: School Climate Research Variables According to Approach and Categories. (Numbers indicate references in the bibliography lists.)

Approaches / categories	Structural-objective variables	Phenomenological-subjective variables
Structure-physical	<u>Student</u>: S.E.S. (1, 41, 53, 76, 130, 178)	
	Class or school composition (40, 54, 73, 128)	
	Ability (40, 60, 130, 145)	
	<u>Manpower</u>: Professional background (46, 48, 53, 57, 64, 134, 192, 200)	
	Education experience (53)	
	<u>Milieu</u>: Ecological environment (133, 204)	
	Structural dependency (34)	alienation environment (109)
	Student classification and selection (28, 53, 128)	loneliness and crowdedness aspects of environment (204)
	Class structure and design (28, 53, 69, 102, 123, 128, 193, 204)	
	School size (26, 40, 102, 180)	perceived school building adjustment (134)
	Religiousness (53)	
	City and community size (40, 180)	
	School district organization (34, 134)	
	School location (53, 170)	
	Equipment and facilities (64, 134)	perceived sufficient equipment (134)

Role-behavior	Student: personal ecological environment (133)	normative group (133) peer group (40, 144, 162)
	Classroom behavior (56, 148, 177)	reference group (60, 129)
	Manpower: teaching style (37)	role image (39, 53)
	Teachers' role structure (37, 194, 202)	perceived teaching approaches (53, 69, 70, 184)
	Work habits (148)	
	Teaching methods (53)	perceived management style (95, 134)
	Level of problems (53)	
	Role climate (53)	perceived problems (53)
	Milieu: cultural learning structure (180)	manifest function (40)
	Formal order (162)	perceived organizational structure (53)
	Structure and hierarchy (129)	
	Organizational structure (145, 150, 183)	
Affective	Student: aggression and conflict with school (60, 132, 134, 178)	attitudes toward teachers (53) attitudes toward school (19, 53, 60) attitude toward friends (53) anxiety (53) aspiration (53, 108, 207) conformism (142, 145, 191) cultural hero (115) cumulative experience (40) expectations, group pressure (108) group cohesiveness (144, 162) locus of control (30, 53, 64) school as social object (191) self-image (53) social identities (19, 53, 79) student choice (98)
	Personal characteristics and affective structure (101, 108, 172)	

	Manpower: staff relationships (167, 169)	alienation (30, 95, 117)
		optimism/pessimism (53)
		motivation (93, 95)
		perceived relationships (53)
		satisfaction (41, 46, 53, 90, 144, 167, 212)
		self determination (40)
	Milieu: subculture (190, 193)	psychological environment (173, 193)
		school spirit (132)
Values	Student:	academic values (41, 60, 63)
		evaluation of other groups (69)
		subculture (59)
	Manpower:	attitudes toward educational goals (53)
		goal preference and perceived school goals (53)
	Milieu: intellectual scale (74)	informal values (121)
	School selective policy (53)	the image of school (20, 203)
		school intellectualism (19, 20, 41, 59, 60)
		saga (35)
		integration as school value (112)

Chapter 2: New Perspectives

1) Conceptual Framework

To organize all the different categories into one frame of reference and to move one step further in developing a conceptual framework to the study of school climate we suggest the use of an elaborated input-process-output model, with multiple inputs and outputs and feedback cycles (fig. 1) when, for the purpose of this study, achievement and integration are considered as the main outputs.

2) Perceptions of Climate

Four main climate perceptions are suggested by many climate studies. In a way, these are also derived from Table 1 and Table 2. They may be referred to as: control variable, input, process, and image. As a second step we will suggest a fifth perception, the interactive one.

a. Control Variable

The first perception argues that climate refers essentially to all statistically yet unexplained variation in educational outcomes. Hence, if one could control and measure every relevant variable, unexplained variation would be minimized, and climate as an observable and changing phenomena would diminish.

b. Input

In the second perspective input variables are perceived as the school climate. Hence, variations in school inputs will be studied to explain, predict or control desired outputs. School size is a common example. This perception will generally tend to minimize the input variables in order to simplify the core element of climate.

However, a more elaborated variation is the input-cluster. Here, inputs are considered as clusters rather than discrete variables. In an even more complicated elaboration, inputs are considered a dynamic configuration where variables interact with each other. Hence, similar input variables may have different impacts depending on the whole input

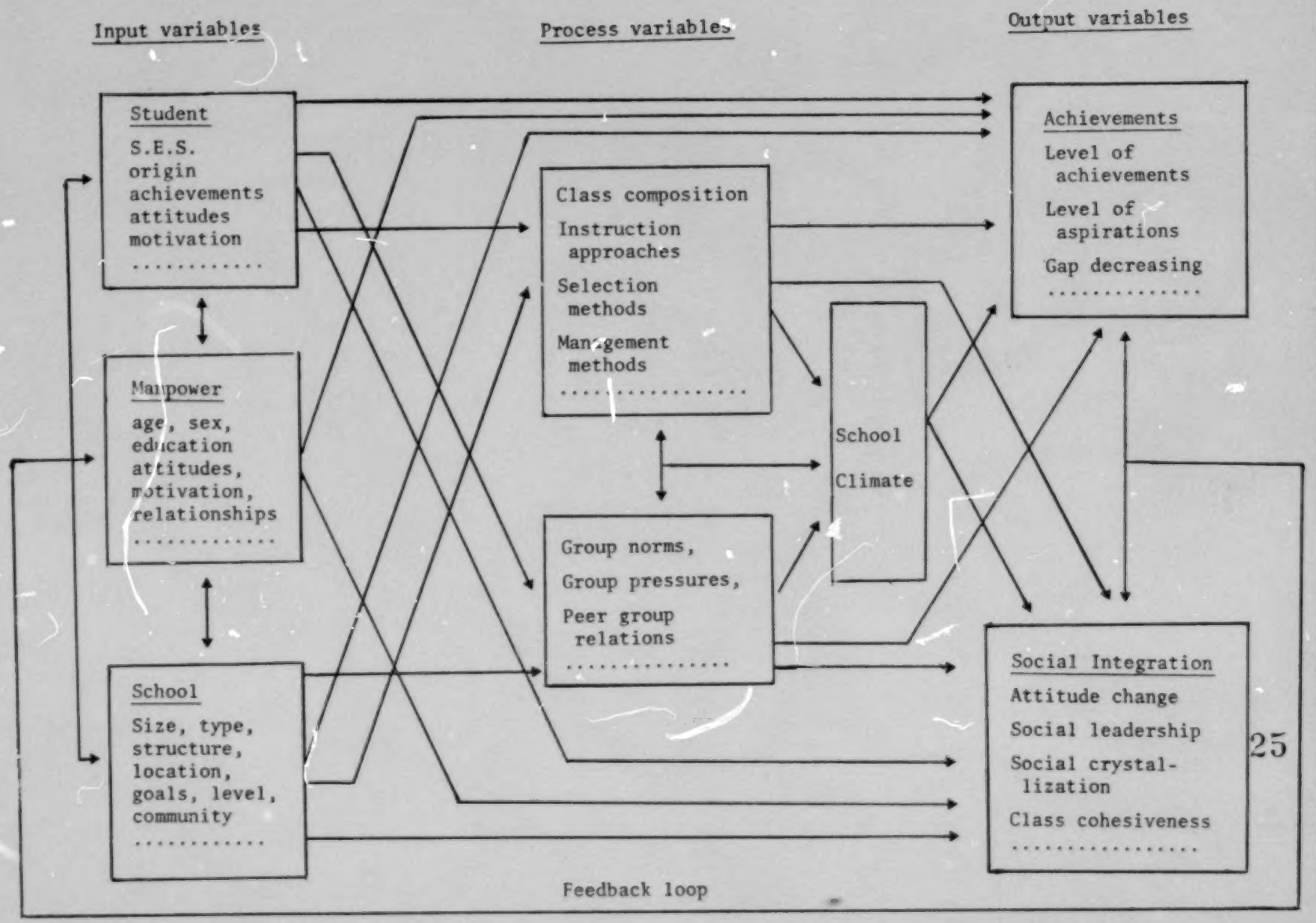

Figure 1: Conceptual Frame: School Variables Achievement and Integration

configuration. Practically, it means that input-variables should be weighed differently in different input configurations. However, the common denominator of this orientation is that input variables are "responsible" for the climate phenomena.

c. Process

The third perception assumes that the most important variables of climate are not the inputs themselves, but rather the way they are manipulated and approached. Climate is, consequently, a function of the process. Again, there are several levels of analysis, from that which tries to identify one or a few dominating process variables, such as authority, or consideration style, to an attempt to determine a cluster of process variables, and, in the more elaborated perception, to analyze and categorize a process configuration.

d. Image

This perspective is based solely on the subjective approach. Here, climate is a function of peoples' perception of the situation. Obviously, this might be influenced by input as well as process variables, but what really matters is what people perceive, think and feel. Halpin's and Croft's OCDQ (1963) is an enlightening example.

e. The System Loop: Interactive Perception

The point of departure of this perception is that in the long run input, process and output variables are interacting and affect each other. Thus, input variables may be conceived as dependent rather than independent variables. A good example is the student body composition (an input variable) which may be affected by school policy regarding the selection process. Furthermore, and maybe more interesting, outputs which are considered as dependent variables may affect the school input variables. School success or failure, school image will influence the input flow on the one hand, and the educational process, and students and personnel feelings on the other. This is a most complicated perception and no doubt creates enormous research problems.

It suggests a dynamic concept of climate, which in itself is part of the system loop. This necessitates the following theoretical constructions.

3) Time and Stability: "Stability Coefficient"?

One of the main questions in this perception will be: what is the climate stability coefficient? If it is, indeed, a constantly changing phenomena, time becomes a significant climate variable. In an interactive phenomena such as this, to develop generalizations applicable to concrete school problems is not an easy matter. Even if climate is based only on few relevant variables, a large number of interactive effects can be considered. This means, practically, that an experiment with a great number of dimensions is needed to develop any generalizations of this situation. Still, climate might change in time, which brings us to Cronbach's (1975) conclusions about interactive studies: "Our troubles do not arise because human events are in principle unlawful; man and his creations are part of the nature world. The trouble is, as I see it, that we cannot store up generalizations and constructs for ultimate assembly into a network.... If the effect of a treatment changes over a few decades, that inconsistency is an effect.... Such interactions frustrate any would-be theorist who mixes data from several decades indiscriminately into the phenomenal picture he tries to explain." (p. 123)

Our questions about stability coefficient become crucial, since under such assumptions it turns out that the best that can be hoped for is to picture a contemporary climate phenomenon -- not prediction and control, but merely a temporary understanding.

If this is so, then beyond the theoretical importance in considering the practical implications, the situation seems very dim. Roughly, the climate research findings took the form of "this is type A climate" or more precisely, "the probability of this cluster of variables to create type A climate is p," and in more advanced studies findings took

the notion of "the probability of this cluster of variables, as considered type A climate to effect type B outcomes are p." Hence, if one has a set of preferred outcomes (value premises), one obtains a linking channel between the "ought" and the "is". One has a clue of the "how". But if the findings represent only a temporary "is", as suggested above, the "how" diminishes as a constant variable.

4) "Life Cycle"?

Focusing again on the main theoretical as well as practical problems, an attempt should be made to describe, analyze and understand the suggested concept of stability coefficient. Under what conditions is climate relatively stable? If it is not stable, does it have any changing rule? Can we delineate climates' "life cycles"? Does such a "life cycle" take a linear, wavey or circular form? And, if we return to the input-output model, does the climate-effect coefficient change, and, if so, in what direction? Does the coefficient develop a cumulative effect? On the assumption that it does, is it mainly an accumulation in time? Or, does the effect diminish in time, on the assumption that people get used to the climate? Some of these questions will be touched on in the empirical findings; however they should always be borne in mind when considering any climate's empirical evidence. In other words, as long as stability coefficients are not developed, empirical findings about climate should be regarded very cautiously.

5) Methodological Remarks

In continuing this line, a word of warning is necessary about possible methodological pitfalls. Most climate studies are based on aggregative measures. Astin and Holland (1961) clearly state that since the major portion of environmental forces is transmitted through people, the dominant feature of an environment is dependent upon the typical characteristics of its members; thus if enough individual characteristics were statistically controlled, any environmental effect would ultimately disappear. Boocock (1966), in response, argues that the

aggregation of individual characteristics produce an average which will have an effect that is really on the group level. Tannenbaum and Backman conclude that aggregative data may provide a more stable and accurate estimate of true structural effects than data at the individual level (1964, p.592), and McDill, Meyer and Rigsby state that the aggregative properties of the schools, such as medians and percentages rather than individual responses, produce more reliable measures because random response and perspective distortion are reduced (1967, p.185). To be sure, any aggregative measurement of climate should be dealt with with great care in order to minimize the problem of spurious climate effects.

There is, as Tannenbaum and Backman put it, some conceptual haziness about variables which are, somehow, characterizations of both the organization and the individual (1964). The transformation of generalizations on the individual level to generalizations on the group level, based on the aggregate measurement, is conditioned by the assumption that the additional operation corresponds to some social phenomenon. Thus, the concept of climate, when based on an aggregate measure, should have meaning at the group level beyond that of the individual. This measure no longer refers to any characteristic of the individual but to a characteristic of the group.

6) Suggestions for a New Look at School Climate Types

For an enlightening example, we will summarize this part of the theoretical analysis by a classification of school climate. The suggested climate profiles should be considered only as possible and speculative profiles, calling for more comprehensive research in this direction. These suggested climates are derived from five case studies which followed the Israeli Educational Reform research (Resh, Adler, Inbar 1980). Although this classification is mainly theoretical, based on insight, analysis of the various climate studies and the main educational approaches, it is possible to say that the empirical case

studies suggested enough clues to justify their presentation and to encourage research in this direction. However, they are presented more as "ideal types" than as an empirical result. The case studies these examples are based on are a follow-up of the comprehensive study of the Israeli Educational Reform which had two basic goals: encouraging social integration and improving students' scholastic achievements* (Chen, Lewy and Adler, 1978). Hence, climates are analyzed with reference to the basic dilemma of emphasizing integration or achievement.

a. "Calmative"

"Calmative" climate is characterized by the continuous effort to reduce tension and to increase satisfaction. This can be seen through the principal's method of easing staff relationships, as well as teachers' orientation toward the children.

Practically, it means reductions of interpersonal conflicts, encouraging friendship, and considering satisfaction with work and school as first priority. Under these conditions social integration will be encouraged by efforts to increase friendships and good social relationships, even if at the cost of scholastic achievement.

b. "Activist"

The "activist" climate is characterized by encouraging student activities as an educational-learning experience. From a school management angle, this means an orientation for continuing group and individual self activity. Such an orientation is, indeed, backed by theory as well as by empirical evidence (Klein and Eshell, 1980). Operatively it is produced by a comprehensive structure of activities, social as well as educational. The assumption here is that student activity is a preferred way of learning as well as of developing and improving social relationships. Thus cooperative activity is approached not only

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*For a full description of the study see Part II, Chapter 1.

as a good method for improving learning achievement but also as a promising social integration tool. In the same manner, an accent will be put on teacher activity, each being assigned special roles. In this case having an "activated" school might, at least in the short term, be associated with conflicts.

c. "Achievement"

The "achievement" climate is characterized by emphasis on scholarship. Such a climate is related to a continuous process of evaluation and comparison. Hence, such a climate will often be distinguished by selectivity, streaming, comprehensive testing and special compensatory learning programs, all aimed at improving scholastic achievement. Teachers, in addition, will be selected mainly on the basis of previous educational background, i.e., academic education, and then on excellence of performance.

This emphasis on scholastic achievements, even at the cost of social integration, is made on the assumption that social integration, in the last analysis, is a function of scholastic equality, or at least of a reasonable gap. If in the short run emphasis on scholastic achievement might increase social tension, in the long run it will, it is hoped, pay off.

7) Proposed "Stability Coefficients"

At this point in the development of our analysis we should ask how stable a climate is. If we consider scholastic achievement and social integration as dependent variables, it is possible to suggest three different stability profiles. In order to make the proposed analysis, we start with a relatively low degree of scholastic achievement and social integration school level. (It would be interesting to find out if different starting points would, indeed, affect the profiles.)

a. Calmative-Stability Profile

This climate is assumed to be highly stable, with relatively few fluctuations and low degree of inner variation in time.

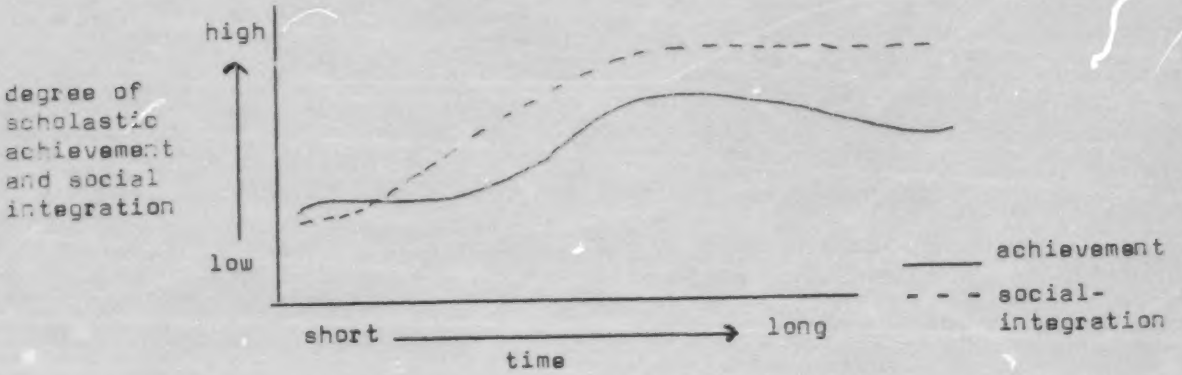

Figure 2: Calmative Profile

The assumption here is that a relaxed atmosphere will gradually improve scholastic achievement and social relationships. This will level out on a medium level of achievement. But after a while, getting used to the atmosphere and having relatively few challenges, may result in a decrease of achievement level. The same might happen to social relationships.

b. Activist-Stability Profile

Since this climate emphasizes learning as well as social activity, the profile will appear wavier.

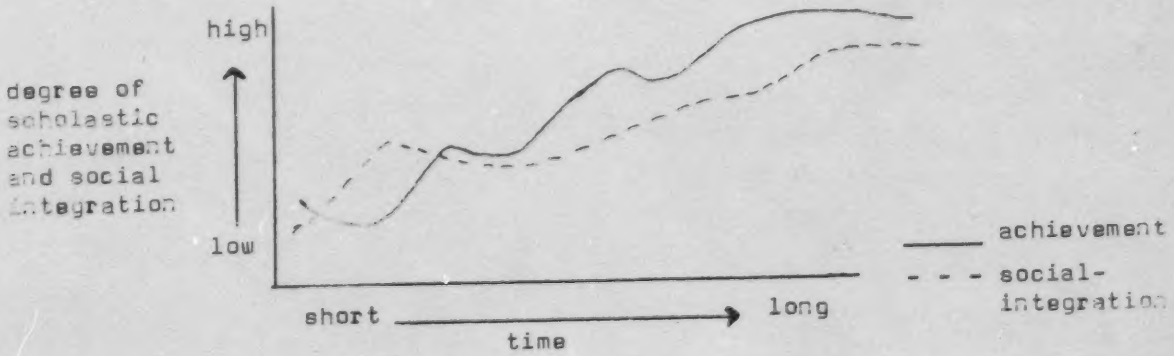

Figure 3: Activist Profile

This profile is based on several assumptions: First, that "activity" is indeed an effective learning method and consequently achievement level will rise, over a relatively long period of time and with some ups and downs, based on personal frustration. Similarly, if activity might improve social relationships in the short run, it will produce a reactive effect after a while. In the same manner, emphasis on social activity might reinforce social differences. Furthermore, and this is an interesting assumption, if indeed "activity" improves learning, and thus scholastic achievement, it is obvious that different students will improve differentially. Potentially excellent students will improve more, since the better the student the more he will gain from better learning methods. Hence, there is the possibility that the achievement gap will increase. From this viewpoint, as long as scholastic achievement remains the main evaluative mechanism in our achieving society and school system, and as long as there is a correlation between ethnic origin and achievement, the "activity" method will have a ceiling level in developing social relationships. But, from a different viewpoint, "activity" will improve social relationship, enhance integration, which in return will improve the learning motivation of the disadvantaged group, thus improving their scholastic achievement. And since the advantaged group might approach a ceiling in achievement, the achievement gap will decrease (Klein and Eshell, 1980).

c. Achievement-Stability Profile

Inasmuch as this climate is defined as putting constant emphasis, even considerable pressure, on scholastic achievement, we can assume a rapid increase in the achievement level. The question is, of course, two fold: the assumed long range direction and the price.

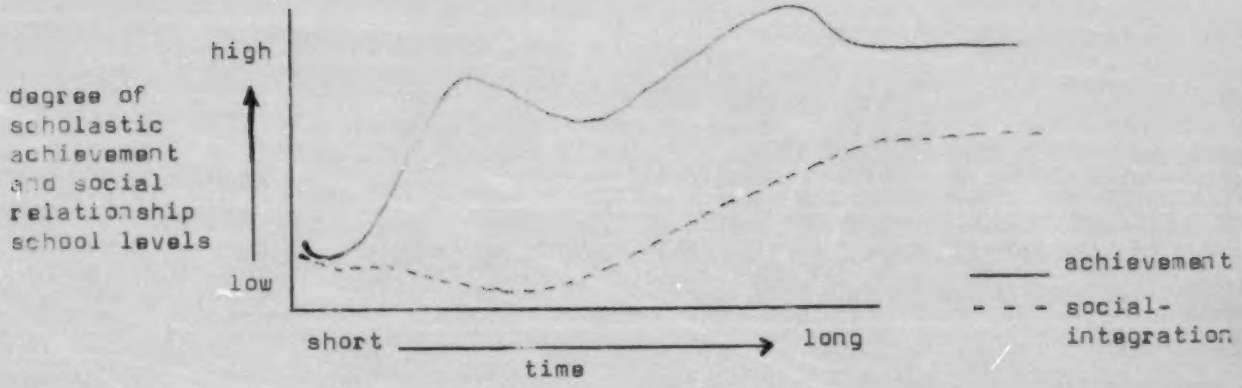

Figure 4: Achievement Profile

The achievement profile will take a double S shape: the learning curve rises sharply, levels, and decreases, and then levels again on a relatively high plane. A new S shape begins when new pressures, effort or new teaching methods have a breakthrough effect. The downward curve is a general reaction to the familiarization process. Social relationships are assumed to be negatively related to the pressure for achievement. An achievement-oriented climate means an evaluative, comparing, competing environment. Hence, it might increase social tension, and take its toll in decreasing social relationships among students as well as among faculty. In the very short period of time, such pressure would probably induce group coalescence. But in the long run, school-status, achievement, social adjustment and selection would join forces to improve social relationships again, based on a more homogenized student body. However, since competition is inherent, social relationships will level.

8) Significant Time

It can immediately be seen that if the above assumptions are theoretically sound, one of the main set of questions will be what are the significant time tables? Furthermore, to what degree do such durations of time correlate with educational periods (semesters, elementary schooling, various high school periods, etc.)? Such synchroniza-

tion can be seen as the significant time. Obviously, differential significant times will have different educational implications.

9) Research Implications

Following the above analysis, results of school climate studies may also depend on when in the life cycle of school climate the study took place. Consequently, only after accumulative knowledge of longitudinal studies will a more accurate picture be established. Furthermore, research should be directed toward a more thorough understanding of the movement of this life cycle. Only then can answers to our questions be derived. Could, for instance, one climate be switched to another in order to improve school effects on all outcome variables? When? A very interesting perspective will be in studying the possible interactions among all three climate types, i.e., developing a comprehensive climate life cycle which will be based on a combination of all three.

To sum up, this analysis is quite speculative and should be considered as such. It is an attempt to relate some of the suggested new concepts to preliminary research clues in order to direct some new ways of analyzing school climate.

Part II

Empirical Analysis

Chapter 1: Foreword

1) Organization

In this part we reanalyze data of the original reform study. First, results of analysis on the school level from the original study are presented. Second, we reanalyze some of the data on the class level, investigating three questions derived from one general hypothesis, as follows: School climate will have a differential effect on different classes: (a) a differential effect according to class-grade; (b) according to class student-composition; and (c) according to the relative position of the class in the school.

2) Research Limitations

It should be clearly emphasized at this stage that secondary analysis is limited by the boundaries of the existing study variables, their measurement, and categorization, and the way they are organized on computer tape, i.e., accessibility. School climate is based on aggregate variables and it was almost impossible to reorganize them on the existing tapes. It turns out that the reanalysis of data creates severe problems when variables were not built in the first place for this purpose (i.e., for the study of climate).

As was already emphasized in the theoretical discussion, school climate is conceptually complicated and its definition is not always clear. Still, an a priori theoretical framework and a research design following this framework allows much better and more adequate data to be collected. In our case, the existing data, which we had to fit to our conceptualization, was a limitation. Another disadvantage was in the sample size: only 19 schools within which there were 105 classes. This places the following empirical secondary analysis and its findings

within restricted boundaries. The findings are, however, interesting and they may suggest trends which open avenues for more research in the directions which were taken in this study.

3) The Israeli Educational Reform

The educational reform approved by the Knesset (Israeli Parliament) in 1968 had two declared purposes: to raise the level of academic achievement, particularly among disadvantaged children, and to encourage the integration of students of different ethnic origins and scholastic backgrounds within the framework of the school. In the Israeli case that means integrating students from higher achieving American-European backgrounds with those from Asian-African backgrounds. Structurally a change from 8;4 to 6;3;3 (elementary; high school to elementary; junior high; high school) took place with unselective admission of all pupils, who had completed the 6th grade in a neighborhood elementary school, to an integrated district junior high school. These schools, by rezoning school districts, would become heterogeneous in terms of the S.E.S. (social economic status) and ethnic origin of the student body. A four-year comprehensive follow-up study was conducted to evaluate the reform.*

4) Sample

The data was gathered from about 3,000 students and 600 teachers from 105 classes (grades 7, 8 and 9) of 19 junior high schools selected as representative of various types of schools in the country. The number of teachers interviewed in each school was proportionate to the

*This study was a joint effort of scholars from the Department of Education at Tel Aviv University and the National Council of Jewish Women Research Institute for Innovation in Education at the School of Education of the Hebrew University of Jerusalem (Chen, Lewy and Adler, 1978).

size of the school, but never less than 25 teachers per school.*

5) Variables

Two groups of variables were used in this study.

(a) Teachers' variables, based on the assumption that aggregates of teachers' attitudes and characteristics are essential to the school climate phenomenon. All variables are school mean scores of teachers' information.

(b) Students' variables: achievement and attitudinal variables. These variables are also aggregates, schools' means in the school level analysis and classes' means in the second part of the reanalysis.

The considerations for the choice of the variables will be discussed later.**

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*The data on the students were collected by the Tel Aviv team, headed by Prof. M. Chen and Prof. A. Lewy, including Mrs. D. Cfir, Mrs. H. Regev and Mrs. B. Fresko. The data on the teachers and parents were collected by the Jerusalem team, Prof. C. Adler and the authors of this study. A full description of the study can be found in the Educational Reform Final Report (Chen, Lewy and Adler, 1978). The data in this study refer only to the research sample and not to the control groups of the elementary and high schools, students, teachers, and parents.

**For a full description of the variables, see Appendix I.

Chapter 2: School Level Analysis

The reform in the Israeli educational system, which constituted a major change both in school structure and in the pedagogical policy, forced the school administration and teaching staff to face a new and problematic situation for which many of them were not prepared and with which many did not know how to cope. Big, heterogeneous schools were created with specialized teaching, role differentiation, a varied teaching staff, some of whom had high school teaching experience, some elementary school experience, some who had no previous experience with disadvantaged students and very few who had any idea what should be done with a heterogeneous class. Although the structural change was the same for all schools in the reform,* its implementation and the educational processes within the schools varied from one to another. The researchers realized this both through observation and in analysis of data which showed significant differences between schools for many attitudinal aspects (Chen, Lewy and Adler, 1978).

Our first analysis is aimed at defining the dimensions which characterize these differences, i.e., different school climates. This analysis was done on the school level with variables which were aggregates of teachers' and students' attitudes except three which were defined as school variables.**

1) Teachers' Variables

Since we are dealing with an educational reform, teachers' attitudes toward the change, the policies behind it and its implementation are of major concern. Four aspects of school and teachers' attitudes

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*There were, though, some differences also in this matter, depending on demographic and ecological limitations.

**For a description of the different ranges of the variables see Appendix 1.

will be included in this analysis.

a) Attitudes toward and implementation of the reform's goals

1: Teachers' attitudes towards the dilemma of achievement versus integration. As the direct implementors of the reform, teachers' preference for achievement or integration as the main goal of the educational reform may be an important indicator of the process which eventually takes place within the school.

2: School degree of selectivity. In the implementation of the reform policy within school, there were schools which deviate from the Ministry of Education directives requiring heterogeneity on class level. The deviation from this principle by constructing homogeneous classes and by allowing a relatively high rate of drop-out, mainly of poor students, defined the degree of selectivity in the chool (Chen, Kfir and Lewy, 1976).

3: School religious affiliation. Since the Israeli educational system consists of two main public sub-systems, the secular and the religious, and because of the assumed relationship between religiousness and attitude toward integration and achievement (Chen, 1975), the school's affiliation (secular vs. religious) was included.

b) Satisfaction and attitudes towards the school

The importance of the affective and tangible variables for the actual work in general, and teaching processes in particular, is widely recognized and discussed (Herzberg 1959, Blocker and Richardson 1962/63, Halpin and Croft 1963, Sergiovanni 1967, Grassie and Cars 1973, and Ziegler and Boss 1974). Furthermore, since we are dealing with a newly created situation (reform), it is essential to take teachers' attitudes and feelings into consideration. Hence the second aspect is in this realm.

1: Teachers' satisfaction from work in the school.

2: Teachers' perception of the degree of various problems in the school.

3: Teachers' perception of the degree to which the reform goals are implemented and achieved in their school.

c) Attitude towards the change

Since we are relating to climates in reformed school, teachers' attitudes towards the expected changes and their readiness to accept responsibility for its outcomes were important.

1: The degree to which teachers perceive the educational reform as an actual change in their teaching procedures.

2: The degree to which teachers perceive themselves as willing to absorb the necessary innovation and change in teaching methods.

3: Teachers' perception of who is responsible for implementing the reform goals.

d) Pedagogical orientation

The last aspect is directly concerned with the teachers' preferred pedagogical orientations.

1: Teachers' image of social role, i.e., how the teachers view their social role as educators.

2: Teachers' attitudes toward "individual encouragement".

3: Teachers' attitudes toward strictness and discipline (i.e., an authoritative approach).

These aspects represent a wide spectrum of teachers' attitudes toward policy orientation, through attitudes toward change and work satisfaction, to preferred pedagogical approaches relevant to the learning process in the classroom.

2) Students' Variables

Students' variables represent also attitudes which are directly relevant to the educational reform and the changes in the system which followed. The variables introduced here are: 1) declared school anxiety, 2) students' satisfaction with school as compared to their previous schools, 3) students' feelings of personal deprivation (the degree to which student feels himself deprived in the teachers' grades) and 4) students' locus of control. The other student variables are: 5) the average level of students' achievement, and 6) the percentage of students of Asian-African origin in the school.

The major question is: what are the relationships between these variables, and do these relationships configurate distinguishable educational climates?

3) Procedure

The interrelationships among all the variables will be explored through a multivariate non-metric technique: the Smallest Space Analysis (SSA). SSA addresses itself to the basic problem of representing adequately a body of data in the smallest space, when representation is to be approached in geometric terms and the ability to visualize is the key to comprehending a set of structured relationships. The distribution of the points in space is determined by the correlation of the variables. The closer the points, the higher the correlations (Guttman 1968 and Bloombaum 1970). The coefficient of alienation implies "goodness-of-fit" between the distances as calculated from the coordinate systems and the original coefficients. The smaller the coefficient of alienation, the better the fit. The decisions as to what constitutes adequate representations is quite arbitrary, but figures around .15 are generally considered adequate (Guttman 1968 and Bloombaum 1970). In order to explore school climate as derived from teachers' attitudes and then to explore it as related

to students' attitudes, the analysis was carried out in two steps, first only the teachers' variables were introduced and second, teachers' and students' variables were analyzed simultaneously.

4) Results of SSA Analysis

a. Teachers' Attitude Configuration

Figure 5 presents a configuration of teachers' attitudes along two distinct poles which essentially represent different educational viewpoints. The clear distinction between the two attitude configurations which were revealed is to some degree surprising.

i) The Achievement-Conservative Pole is characterized by a preference for achievement, high degree of selectivity, religiousness, a low emphasis on the social image of the teacher's role, great emphasis on authoritative approach, and less on individual encouragement as an educational approach. At the same time, there is less readiness for change and a low perception of the change involved in the educational reform while responsibility for achieving the reform goal is placed on others (e.g. not the teachers). There is also a lower level of satisfaction from work in the school, a higher level of perceived problems, and dissatisfaction with the implementation of the main educational goals of the reform.

Figure 5: SSA of Teachers' Attitudes and School Policy*

*Coefficient of alienation = .104

ii) The Integrative-Open Pole is characterized by approaches emphasizing educational encouragement of the individual, the social image of the teacher's role, with less emphasis on authoritative approach. At the same time there is less selectivity and a preference for integration as the main goal of the reform, a higher level of satisfaction from work in school, perceived progress toward achieving the main goal of the reform, and a lower level of perceived problems. The educational reform is perceived in terms of pedagogic innovation, readiness for change, and acceptance of responsibility for results.

b. Teacher-Student Configuration

Although the importance of the above findings cannot be overlooked, relating students' attitudes, achievements and school

composition to teachers' attitudes in the same schools may be even of a greater interest. Hence, a simultaneous analysis of teachers' and students' variables was employed, which revealed the following (Figure 6):

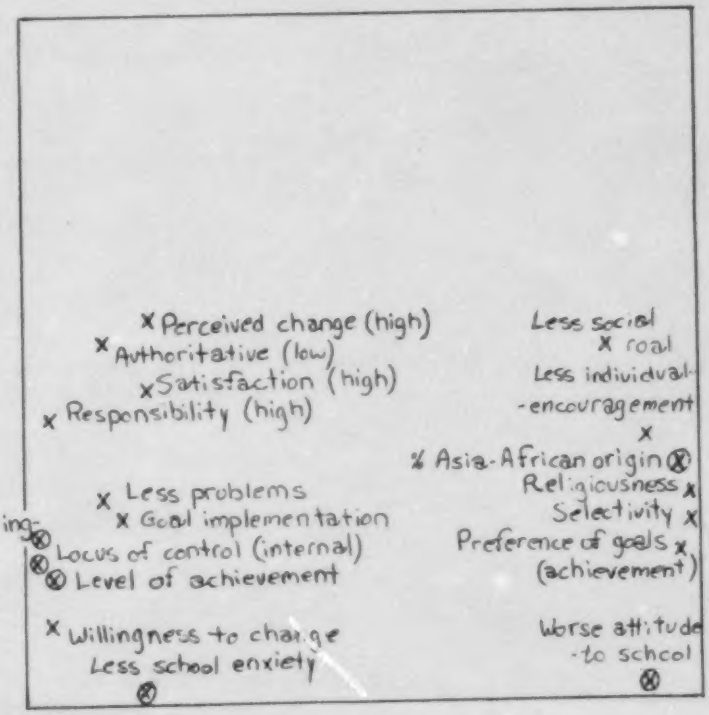

Figure 6: SSA of Teachers' Attitudes, School Policy, Student Attitudes, Level of Achievement and Percentage of Students of Asian-African Origin*

(Student's variables are circled)

*Coefficient of alienation = .157

Again, a quite surprisingly clear picture is obtained. Schools with a high percentage of students from Asian and African origins, with a lower level of achievement, are characterized by teachers' "achievement-conservative" set of attitudes, which in turn is directly related to a high level of students' school anxiety, unfavorable attitudes toward

school, strong feelings of deprivation by teachers and an external locus of control. The "integrative-open" pedagogical climate, on the other hand, is characterized by a low level of students' school anxiety, more favorable attitudes toward school, weaker feelings of grade deprivation and an internal locus of control, a lower percentage of students from Asian-African origin and a higher level of students' achievements. Although there are reasons to assume that teachers' attitudes (and behavior) create the school climate which in return influences students' attitudes (and behavior), no such conclusion can be drawn from this analysis. We are dealing here only with inter-correlations, and the causal relations are very questionable, especially since school composition and level of achievement, which are included in the analysis, may be the cause of both students' and teachers' attitudes. Still, the fact that certain schools (and their students) are exposed also to a distinguishable climate from the point of view of their teachers is in itself a significant phenomenon.

5) Further Procedures

Although the variables in the SSA are school means, they represent sets of attitudes only on the group level. There is still a need to show, methodologically, that the schools themselves can actually be distinguished according to these configurations. For this purpose two approaches are used, although each one of them is essentially sufficient to show the needed transformation. First, the positions of the variables and the cases are reversed. The variables (or characteristics) are conceived as cases and the cases (or schools), as variables. Thus, instead of computing correlations between variables as they differ by schools, they are computed between schools as they differ by their variables. The outcomes are revealed in Figure 7.

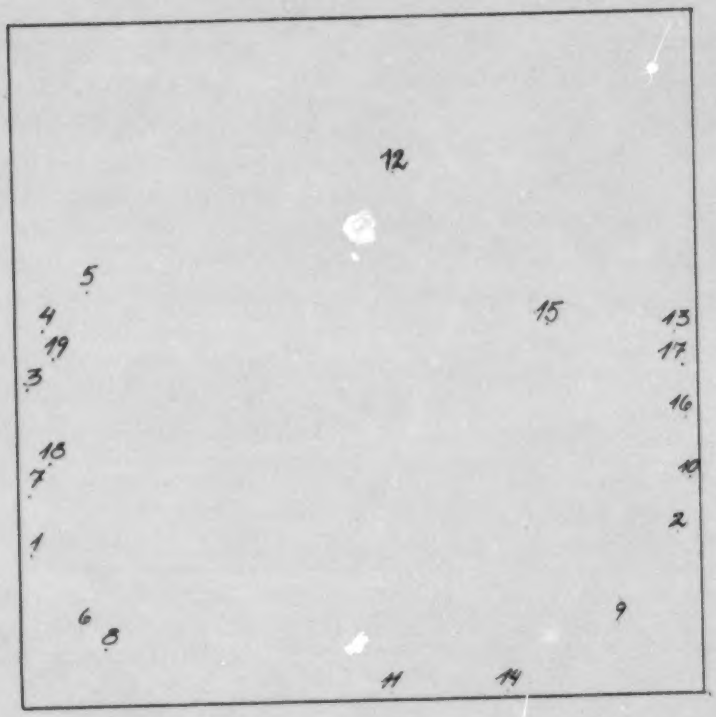

Figure 7: SSA of Schools' Profiles According to Teachers' Attitudes, Students' Attitudes, Levels of Achievement and Percentage of Students of Asian-African Origin*

*Coefficient of Alienation = .177

Second, in each of the two sets of attitudes the standardized scores were summarized, each school receiving two scores: one, the sum-score of the attitudes which constitute the integrative-open climate, and one sum-score of the attitudes which constitute the achievement-conservative climate (Figure 8). The schools could then be plotted according to their two scores as follows. (It should be noted that the numbers in Figures 7 and 8 represent school codes with each number standing for a school.)

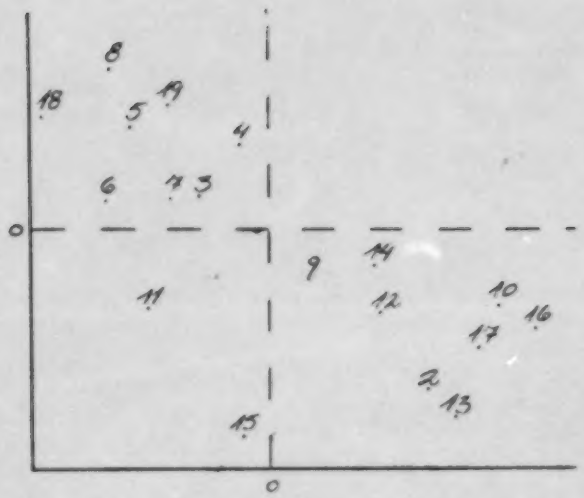

Figure 8: Distribution of Schools According to their Sum-Scores in the Two Sets of Attitudes

In both graphs (7 and 8) two main groups of schools can clearly be differentiated, each group characterized by a different set of attitudes. In other words, it is possible to say that the schools in this study can be distinguished according to what Coleman (1958-59) termed the "boundaries of homogeneity", and can be classified into one of two quite clearly different school climates. The advantage of these presentations is that they enable the observation of different degrees of what may be termed "climate intensity". It is not surprising that not all schools are unequivocally characterized by either one of the two climates. The distribution can be seen as indicating a continuum, not an either-or situation.

c) Concluding Remarks

Although the present findings are limited by the nature of the sample, they provide some clear indicators to the phenomenon of school climate. Empirically, two distinct school climates appear, which are

also related to the two main goals of the Israeli Educational Reform.

Since these dilemmas are also based on actual school policies, the Israeli Educational Reform can be seen as being implemented along two parallel lines: the achievement-oriented one and integrative one, which in turn are linked with "conservative" and "open" pedagogical orientations. Consequently any evaluation of the reform must take this into account. An overall view which presents national means might thus be misleading, since we can now reasonably anticipate two types of outputs, each one for a different group of schools, when the variation between the two types might turn out to be greater than the variation between schools.

At a more operative level, students of the low socio-economic status seem to attend schools with an "achievement-conservative" climate to a greater extent than do students of a higher socio-economic status. This raises an interesting question. Might their attitudes and, to some degree their poor achievement, be partially due to the school climate and not only to their background? If we assume that climates derived from teachers' attitudes are relatively stable, and that these attitudes tend to strengthen each other, they may consequently have a cumulative effect and be that much more powerful. In any case, we obtain a vicious circle, where the less achieving student is put into pressing situations which seems to increase anxiety, feelings of deprivation, and maybe even increase the dropout level.

To sum up, this part of the study can be seen as a threefold contribution to the development of the concept of school climate. From the theoretical angle, it is an effort to build a frame of reference to explain the school climate phenomenon. The Smallest Space Analysis (SSA) method is employed, which, to the best of our knowledge, has not been used before in analyzing school climate. And, most important, empirically, this part of the study attempts to enrich our insight into the "real life" situations within the schools, which in the present case are going through a process of major changes and have to cope with the dilemma created by the need to maintain high standards of achievement as well as the integrative policy.

Chapter 3: Class Level Analysis

1) Purpose

As mentioned already, integration through new class composition was one of the main purposes of the Israeli Educational Reform. The homeroom class is considered the most relevant learning and social unit, especially in Israel where much of the educational activity revolves around the class. The variation in school compositions is the result of demographic limitation of the school zoning, while variations in class compositions within schools was the result of in-school policies in a system which has a relatively large degree of autonomy. Since manipulating class composition is considered a mean for social integration as well as for improving scholastic achievement of the disadvantaged population, the analysis on class level is important and could have implications beyond the Israeli experience.

The first question considered is the association between teachers' variables (conceived as school climate) and students' variables (conceived as classes' outcome). Is this relationship different for different class compositions? i.e., is there a different relationship between teachers' characteristics and attitudes and the classes' attitudes when the classes dealt with are comprised of high or low percentage of AA students? Furthermore, since various classes (in terms of their compositions) may exist in the same school, such a differential effect implies that the same school climate has a different meaning for different classes. And last, does the relationship investigated take a different form for the different class grades?

Analysis on the class level mixes data on two levels: students' data, which are based on class level computations (class means) and teachers' data which are based on school level elaborations (school means). There was no way to identify and relate specific teachers to specific classes. Hence, any analysis which is related to class

climate is essentially an application of the concept of school climate to the class.

Although this is a limitation, it turns out also to have some advantages. In such analyses it is possible to see how similar climates (based on school policy and teachers' variables) might be differently associated with different classes according to their student composition and class grade. And this is indeed one of the main purposes of the study.

2) The Variables

a. Teachers' Variables

Since we use analysis of variance and regression analysis with a relatively small sample size (when analyzing separately classes according to their student composition), it is important that the number of climate variables (the independent) should be kept small. Hence, four variables were chosen, which could be seen as representing different aspects of the school climate.

(i) Teachers' mean level of education - an input variable which can represent the quality of teachers, at least formally.*

(ii) School level of selectivity - this is a school variable, measuring the degree to which schools used excessive selection mechanisms within the school and the classes. This variable represents school policy in the realm most relevant to the structural integration within school.

(iii) Teachers' preference of educational goal - a major attitudinal variable representing teachers' orientation regarding the emphasis on achievement and integration.

(iv) Authoritarian attitude - teachers' pedagogical approach toward students and the learning process.

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*This variable was not considered in the original, school-level analysis.

b. Students' Variables

Six variables were applied here. The first, (i) class achievement level - mean achievement in objective tests (in 5 subjects). The other five variables are attitudinal variables which are considered, to a different degree, achievement-related.

(ii) Locus of control

(iii) Aspirations - educational and occupational (an index)

(iv) Per cent of students in the class who desire to study in academic high school (planning academic school - PAS)*

(v) Academic self-image

(vi) Manifest school anxiety*

c. Class Composition

Three groups of classes were distinguished: classes with a relatively low percentage of students from Asian-African origin (less than 40%), relatively mixed classes (41-80% students from Asian-African origin), and classes with a majority of students from Asian-African origin (81-100%). Undoubtedly this categorization is not ideal. There are enough signs to show that a different grouping is more meaningful (Inbar 1981). However, in the secondary analysis we were tied to the organization of the original material, which did not allow a different distinction.

The following is the basic distribution of classes in the different schools.

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*These variables were measured at 7th and 9th grades only.

Table 3: Class and School Distribution According to Student Composition

Classes	Schools -40	41-80	81+	Total
-40	24	6	0	30
41-80	3	26	1	30
81+	0	10	28	38
Total	27	42	29	98*

*For one school information on class composition is missing.

One can see that, even within the rather crude distinction of three compositional types, about 20% of the classes have a different composition than that of the school. This stems from various homogenizing procedures within the schools. Table 4 presents mean classes' achievement in the various composition categories, in 7th, 8th and 9th grades. It is obvious from this table that class composition is strongly related to its mean achievement. The higher the percentage of students from Asian-African origin the lower the class achievement mean. Still, the relatively high standard deviation among all classes calls for more attention.

Table 4: Achievements According to Class Composition (Percentage of Students from Asian-African Origin)

Grade	All classes		Class composition					
			-40		41-80		80+	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
7	55.86	13.86	70.60	5.1	57.69	9.1	42.55	7.6
8	54.73	16.21	71.23	7.1	55.83	12.2	40.24	10.6
9	53.68	14.68	68.60	6.4	56.17	10.6	39.55	8.4

3) Class Achievement Distribution Between Schools

The following (Table 5) is the basic distribution of classes in each of the schools according to class composition and level of achievement.

Table 5

Again, as can be seen, the lower the percentage of students of Asian-African origin (AA) the higher the achievement level. This is a quite familiar and expected picture in schools. However, the interesting point is that there are clear differences in achievement level between classes and schools of the same composition. Similarly, there are clear differences between schools in the standard deviation of achievement.

As a result a few questions are raised. First, are these classes (according to composition) also characterized by other student variables? Second, are these classes associated with special kinds of teachers? Third, are climate characteristics (as chosen in this study) related to different class achievements? Fourth, if indeed climate is related to

Table 5: Achievements According to Class Composition and Schools

School	Percentage AA in school	-40			41-80			81+		
		No. of Classes	Mean	S.D.	No. of Classes	Mean	S.D.	No. of Classes	Mean	S.D.
1	41-80	-	-	-	2	55.5	2.1	2	44.5	12.0
2	81+	-	-	-	-	-	-	6	46.2	6.2
3	-40	4	71.0	1.8	3	57.3	15.0	-	-	-
4	-40	8	70.4	2.5	-	-	-	-	-	-
5	-40	4	75.5	2.4	-	-	-	-	-	-
*6	-40	-	-	-	-	-	-	-	-	-
7	41-80	1	63.	0	1	48.0	0	-	-	-
8	41-80	2	64.5	.7	5	59.4	12.8	1	41.0	0
9	81+	-	-	-	-	-	-	7	39.4	8.9
10	81+	-	-	-	-	-	-	6	45.7	7.7
11	41-80	1	59.0	0	7	55.0	7.3	-	-	-
12	-40	5	73.4	8.3	-	-	-	-	-	-
13	41-80	1	72.0	0	2	59.5	2.1	3	36.7	9.7
14	41-80	-	-	-	8	60.2	8.0	1	39.0	0
15	41-80	-	-	-	2	53.0	1.4	2	45.5	12.0
16	81+	-	-	-	1	38.0	0	4	38.0	6.9
17	81+	-	-	-	-	-	-	5	45.0	5.1
18	41-80	1	70.0	0	4	65.5	2.4	1	43.0	0
19	-40	3	69.7	6	-	-	-	-	-	-

*For one school, information on class composition is missing.

achievements, is this relationship differential in different class compositions? We investigate the first two questions through analysis of variance and intercorrelations between climate variables in the various class compositions.

4) Analysis of Variance: Teachers, Students, Class Composition and Grades

The following (Table 6) is a summary of the variables means and distribution and an analysis of variance by class composition.

Table 6

Some interesting points revealed through the analysis of variance deserve special attention:

a. It turns out that in classes (schools) with a higher percentage of AA (81%), teachers' level of education is lower on the average, they tend to put more emphasis on achievement and selective processes are more pronounced. There were no differences in pedagogical approach. Similarly, in these classes students' locus of control is more external, their level of aspirations is lower, and a smaller percentage of them express wishes to continue in academic high school.

b. The level of anxiety in grade 7 is higher the higher the percentage of AA students.

c. The locus of control becomes more internal the higher the grade. This is more pronounced in classes with a low percentage of AA than in classes with a higher percentage of AA students. Obviously, this reflects children's age development, but the fact that the low percentage of AA classes has a differential growth may indicate class composition effect, too.

d. Interestingly, in heterogeneous classes, the level of aspiration decreases in the higher grades (15.64, 13.42, 13.20)*

* Note that the range of the scales are different. See Appendix 1.

Table 6: Means and Analysis of Variance of Teachers' and Students' Variables in 7th, 8th, 9th Grades by Class Composition

Variable	Total Mean	To 40% AA (1) Mean	41-80% AA (2) Mean	81+% AA (3) Mean	F	sig	Distinction*
Teacher Education	12.44	13.39	12.75	11.50	17.02	.000	1,2/3
Selectivity	1.98	1.45	1.97	2.42	14.13	.000	3/2/1
Goal Preference	2.20	-3.45	-3.83	.47	8.39	.000	1,2/3
Authoritarian Attitudes	2.88	2.86	2.94	2.86	2.58	.08	1,2/1,3
7th Grade							
Locus of Control	4.35	4.67	4.42	4.03	38.23	.000	3/2/1
Academic Self-image	15.61	15.49	15.63	15.72	45.68	n.s.	
Aspirations	14.88	16.59	15.64	12.81	46.28	.000	3/2/1
Placement in High School	51.35	62.4	60.79	33.34	20.76	.000	2,1/3
Anxiety	10.99	10.67	11.02	11.33	3.39	.037	1,2/2,3
8th Grade							
Locus of Control	9.29	9.84	9.51	8.60	49.62	.000	3/2/1
Academic Self-image	3.73	3.65	3.60	3.85	10.58	.000	1,2/3
Aspirations	13.27	14.76	13.42	11.91	60.26	.000	3/2/1
9th Grade							
Locus of Control	9.46	10.08	9.68	8.72	38.91	.000	3/2/1
Academic Self-image	3.65	3.67	3.59	3.72	1.53	n.s.	
Aspirations	12.88	14.66	13.20	11.12	53.07	.000	3/2/1
Placement in High School	42.4	65.67	43.89	22.16	32.77	.000	3/2/1
Anxiety	10.04	10.08	11.97	11.09	.47	n.s.	

*indicates a significant difference between the groups (class compositions).

Do heterogeneous classes have a "leveling" effect on aspirations? In homogeneous classes (up to 40% and 81+% AA), on the other hand, aspirations increase from grade 7th to 8th but decrease slightly from the 8th to the 9th grade.

e. The percentage of students who wish to continue in academic high school, an indicator of the more immediate educational plans, takes a different shape. Here, the level of aspiration in classes with less than 40% AA increases from the 7th to the 9th grade, but dramatically decreases in the other compositions. Is this trend just an effect of class composition? Or, can we assume a differential school climate impact in the various grades and class compositions, mediating such an outcome?

5) Intercorrelation of Teachers' Variables According to School Composition

The following are tables of intercorrelation between teachers' variables in various class compositions. Since teachers' variables are composites on the school level, and there is a high correlation between school composition and class composition, these figures essentially represent correlations on the school level.

Table 7: Correlation Matrix of Teachers' Variables for the Entire Population

	1	2	3	4
1. Mean Level of Education	1.00			
2. Goal Preference	-.45*	1.00		
3. School Selectivity	-.47*	.46*	1.00	
4. Authoritarian Attitudes	-.27*	.29*	.47*	1.00

*Significant at .05 level

In the entire class population, there is a significant relationship between selectivity, achievement orientation, authoritarian attitudes and a lower level of teachers' education.

Table 8: Correlation Matrix of Teachers' Variables According to Different Class and School Composition

	Classes in schools with up to 40% AA				Classes in schools with 40-80% AA				Classes in schools with 81+% AA			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Mean Level of Education	1.00				1.00				1.00			
2. Goal Preference	-.23	1.00			-.65*	1.00			.56*	1.00		
3. School Selectivity	-.10	.27	1.00		-.24*	.76*	1.00		-.64*	-.76*	1.00	
4. Authoritarian Attitudes	.31*	-.28	.73*	1.00	-.45*	.34*	.64*	1.00	-.28	-.68*	.81*	1.00

*Significant at .05 level

Several points deserve emphasis: first, the lowest correlations appear in 'high-homogeneous' (less than 40% AA students) classes. If we consider the combination of several variables as an indicator of school climate, it seems that such a climate becomes more coherent in heterogeneous schools and schools with more than 81% of AA. More specifically the correlation matrix gives us the first indication for the tendency of a climate to develop in schools. This tendency could be either a pre-selection factor (certain teachers are being recruited into certain schools), or an indication of a dynamic development within the school through interpersonal or other influences.

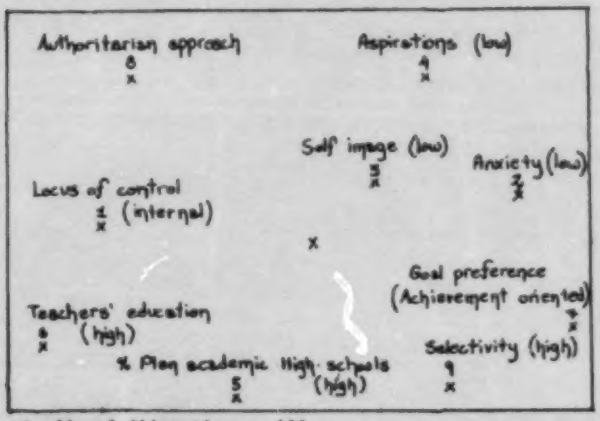
Generally, it seems that a lower level of teachers' education, high level of selectivity, emphasis on achievement vs. integration and authoritarian attitudes appear as a characteristic cluster in schools. However, the picture differs somewhat when looking at the correlation within various schools by their students' composition. In schools with a minority of AA students most correlations are smaller and the correlation between teachers' level of education and educational attitude is reversed: higher level of education is related to higher authoritarian attitudes. The correlations in integrated (heterogeneous) schools are all stronger and in the same directions as for the entire population. The correlations in schools with a majority of AA students are also stronger, but almost all of them in the reverse direction. These schools (with 81+% AA students) are generally more selective, more achievement oriented, and have a lower level of teacher education (see means in Table 6). The question to be asked in the next step is whether and how different elements of climate relate to students' variables.

6) Class Educational Outcomes and School Climate - SSA

The first investigation of the possible differential impact of school climate is through studying the relationships between these two groups of variables in various classes by grade level and by student body composition.

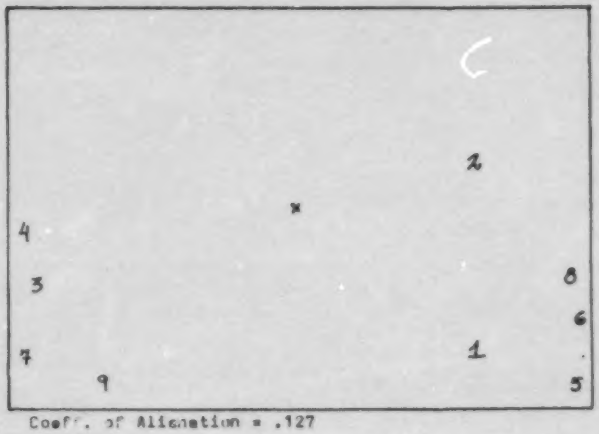
We have used the SSA method in order to obtain a visual presentation of the interrelationships among the various variables in each class-type (by grade and composition) separately. Figures 9, 10 and 11 present the findings of these analyses.

a. Classes with less than 40% AA students



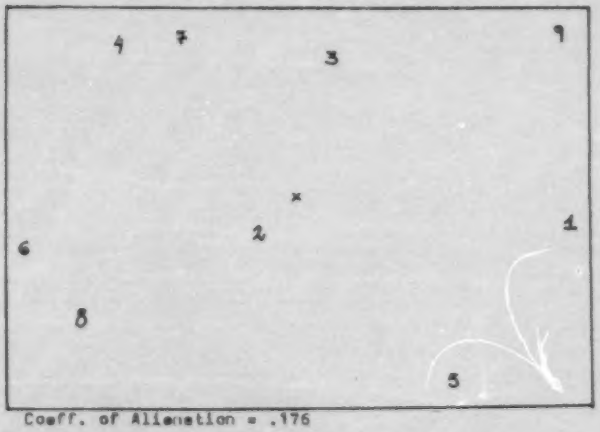
Coeff. of Alienation = .128

b. Classes with 41-80% AA students



Coeff. of Alienation = .127

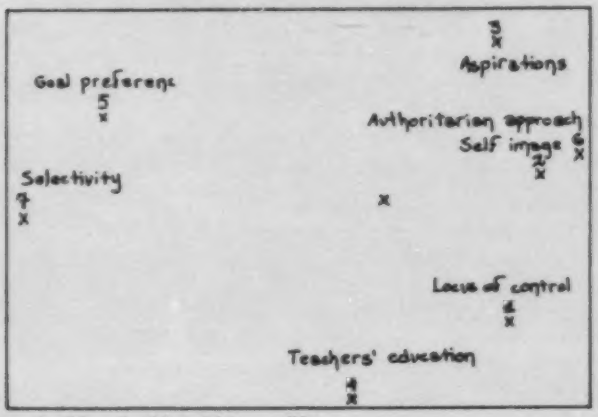
c. Classes with more than 80% AA students



Coeff. of Alienation = .176

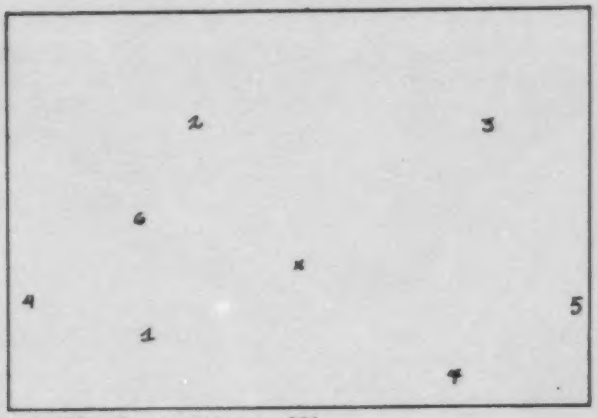
Figure 9: S.S.A. of School Climate Variables and Classes' Attitudes in Three Class Compositions: 7th Grade

a. Classes with less than 40% AA students



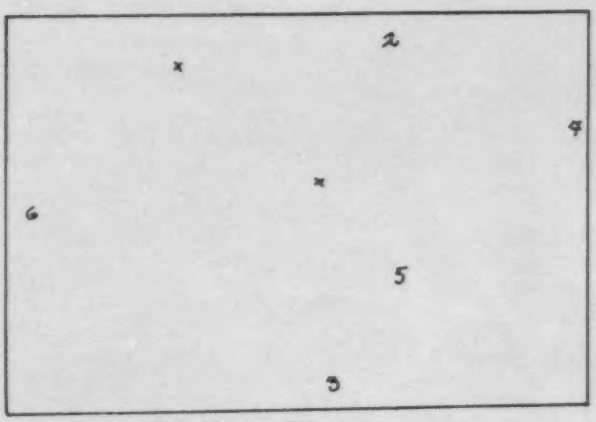
Coeff. of alienation = .51

b. Classes with 41-80% AA students



Coeff. of alienation = .106

c. Classes with more than 80% AA students

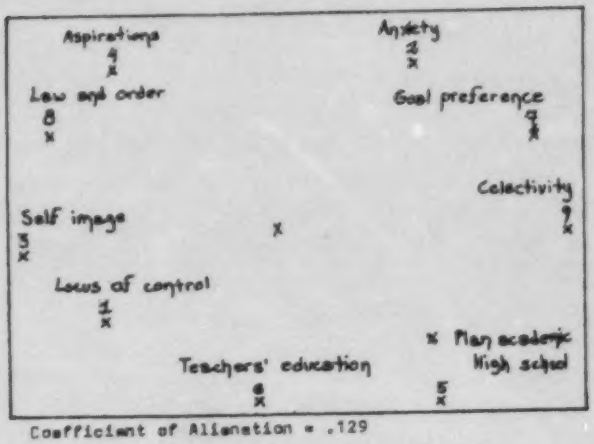


Coeff. of alienation = .284

Figure 10: S.S.A. of School Climate Variables and Classes Attitudes in Three Class Compositions: 8th Grade*

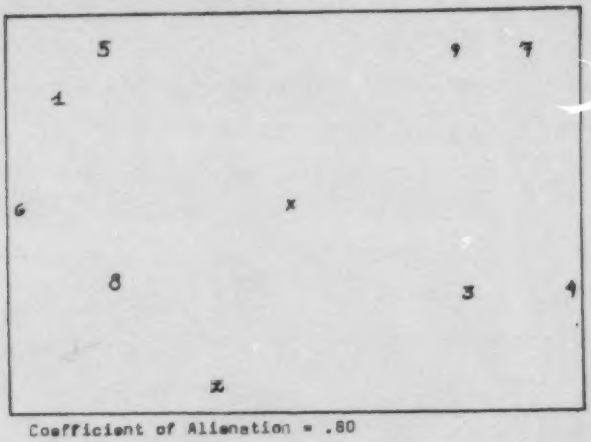
*Two students variables (anxiety and % planning for academic high school) were not measured in 8th grade and thus do not appear in the S.S.A. for this grade.

a. Classes with less than 40% AA students



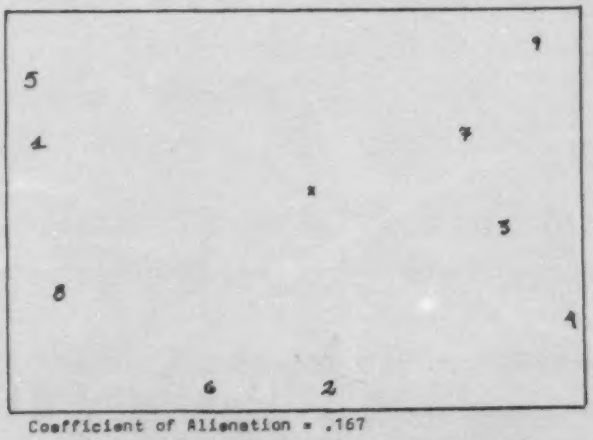
Coefficient of Alienation = .129

b. Classes with 41-80% AA students



Coefficient of Alienation = .80

c. Classes with more than 80% AA students



Coefficient of Alienation = .167

Figure 11: S.S.A. of School Climate Variables and Classes' Attitudes in Three Class Compositions: 9th Grade

The pattern of interrelationships among the variables is essentially constant and repeats itself. It indicates the possibility of two distinctive climates. One cluster of variables is based on higher teacher education, more liberal educational approaches, integration as teachers' preference of educational goals, student internal locus of control, and a higher percentage of students aspiring to continue academic high schools. The opposite cluster is based on lower student academic aspiration, selectivity as school policy, and achievement as the teachers' preferred goal. This picture resembles very much the analysis on the school level. The variable of student anxiety turns out not to be directly related to any of the climate clusters and "moves" from one climate to another. In the integrated classes, i.e., with a heterogeneous composition, the coalescence of climate clusters is much clearer, and the climates are more polarized. It seems that heterogeneity of classes, more than the grade level, contributes to a stronger correlation between teachers' and students' attitudes.

A hypothetical analysis might suggest that the climates represent the development of a dynamic vicious circle, when teachers' achievement orientation reinforcing school selectivity policy, both strengthening authoritative pedagogical approaches, which are then positively related to students' low academic self image, external locus of control, and low level of high school aspirations, all of which are again positively related to teachers' goal preference (achievement) and school policy. Such a hypothetical vicious circle can be shown graphically as follows (Fig. 12).

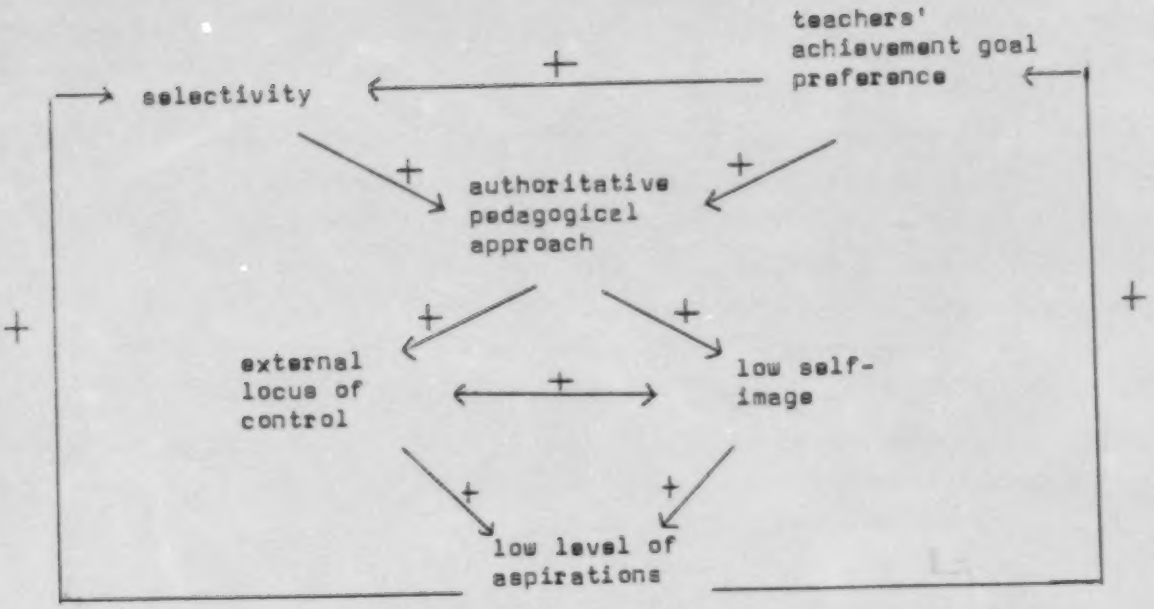


Figure 12: Vicious Circle in Selected Climate

7) School Climate and Educational Outcomes of Classes

In the following three sections we investigate the possible effects of climate variables on classes' educational outcomes through regression analyses. Though the foregoing regression analyses suggest a uni-directional relation, one has to be cautious in viewing these outcomes as the dependent variables. In the long run the variables interact. For instance, selectivity as a variable of school policy can be itself a function of previous students' success, i.e., achievement. The same can be said for other, achievement-related, attitudes such as aspirations and other behavioral aspects. However, since we assume that climate may affect students' behavior more than the latter affects climate, regression analyses were employed in which climate variables are the independent variables and their possible effect on different educational outcomes are tested.

The analyses were carried out in three stages. First, achievement was considered as the dependent variable. The regression of class achievement on climate variables, although indicating certain

interesting trends, did not produce very meaningful outcomes. Considering the well-established knowledge about the strong relationship between student's personal resources (ability and S.E.S.) and his achievement, this finding is not very surprising. Hence, in the second step we decided to investigate students' (classes) attitudes as related to school climate. It may be that school policy and teachers' attitudes do not affect achievement directly, but they have an effect on students' attitudes. Since these attitudinal variables are achievement-related, if such an effect occurs, besides being important and meaningful on its own, one may argue that in the long run achievements will be affected, too.

In order to observe the relationships between climate variables and students' attitudes, since there is an association between those attitudes and achievement, students' achievement was introduced into the regressions as a control variable. This means that we introduced a very tight control into the analysis, especially since the analysis by class composition is in itself a certain control on achievement.

Five student variables were utilized here as dependent variables: aspirations, percentage of students planning to attend academic high school, locus of control, self-image and anxiety. Analyses were carried out for the entire class population and separately for the three different class compositions, the latter in order to detect the possibility of differential climate effects in different compositions. All analyses were carried out separately for 7th, 8th and 9th grade outcomes. Since selectivity, one of the four climate variables, is an indicator of operative school policy while the other variables are either teachers' resources or attitudes, the possible differential effect of climate in different levels of selectivity was studied in the third stage.

8) Achievement and Climate

Table 9 is a summary of the step-wise regression analyses of the relationship between several climate variables and two dependent variables: class mean scholastic achievement (in each of the three grade levels: 7th, 8th and 9th) and class mean high school track placement. The analysis is done separately for the three types of classes according to their composition (per cent of AA origin students).

Table 9

Four main points can be summarized:

a) Most of the independent variables do not contribute significantly to the variance in achievement in the different classes. Consequently, it will be more appropriate to consider the results as indications of possible trends only.

b) While achievement is measured through achievement tests, "placement in high school" measures the students' placement after middle school in various high school tracks. This placement, although related to achievements, is probably also affected by the relative position of the students in the class, or the relative position of the classes within the school. That may give some explanation to the reverse effects which appear in the regression analysis of "selectivity" and "goal preference" on achievement vs. high school placement. The small sample size (number of classes) and the weak effects should be emphasized again. The analysis should, thus, be looked upon cautiously and serve just as an indication to a more careful investigation in this direction.

c) There are indications that the explanatory power of climate variable decreases as the percentage of AA students in the classes increases.

d) In the homogeneous classes, with less than 40% AA, the explanatory

Table 9: Regressions of Achievements in the Various Class Compositions on Teachers' Variables[1]

Dependent Variable	Teachers' Level of Education B	Teachers' Level of Education R^2	Selectivity B	Selectivity R^2	Goal Preference B	Goal Preference R^2	Authoritarian Attitudes B	Authoritarian Attitudes R^2	Total R^2
a. Classes with up to 40% AA. N = 31									
7th Grade Achievement	.33	.078	-.09	.003	.17	.022	.32	.122	.225
8th Grade Achievement	.32	.133*	-.31	.044	.09	.006	.40	.044	.227
9th Grade Achievement	.40*	.218*	-.45	.090	.11	.009	.54*	.065	.382
High School Placement	.66*	.342*	.46*	.116*	--	--	-.15	.009	.467
b. Classes with 41-80% AA. N = 36									
7th Grade Achievement	.41*	.160*	.16	.022	--	--	-.08	.003	.188
8th Grade Achievement	.54*	.205*	.04	.019	.19	.007	-.12	.003	.234
9th Grade Achievement	.53*	.149*	--	--	.27	.030	-.09	.006	.184
High School Placement	.10	.064	.49	.046	-.49	.047	.09	.005	.162
c. Classes with 81+% AA. N = 38									
7th Grade Achievement	.18	.023	--	--	-.08	.006	.09	.009	.038
8th Grade Achievement	.06	.006	-.07	.002	.27	.064	.16	.007	.080
9th Grade Achievement	--	--	--	--	.03	.001	.06	.003	.004
High School Placement	-.15	.043	.37	.051	-.31*	.060	-.40	.024	.179

[1] Empty spaces mean that the variable did not enter the regression due to its very low partial correlation with the dependent.

* $p < .05$ level

power of the climate variables increases with grade-level. This might indicate that in such classes school climate has a cumulative effect on student achievement. Interestingly, we do not find such consistent relations in other class compositions. Likewise, achievement is related to a low level of selectivity in the various grades, but "placement in high school" is positively related to selectivity: a higher level of selectivity predicts a higher track placement in high school. In high-homogeneous classes and more distinctly in heterogeneous classes teachers' level of education is positively related to achievement. This relation does not appear in low-homogeneous classes, which might indicate a differential association in various class compositions of teachers' education and students' achievement. However, this relationship may be partly due to the colinearity between class composition and teachers' level of education. But one has to be cautious regarding this indication since this might be the product of some preliminary selective processes (of teachers) in such schools. In classes with a majority of AA students (more than 81%) a different picture can be observed. The relationship between achievement and climate is on the whole insignificant, while the variance in track placement is best explained in this class composition. As far as achievement is concerned, this finding may be related to the tight control introduced by the specific cutting-point (81+% AA students) of class composition. As for track placement, the combination of non-authoritative approach, integrative orientation and higher level of selectivity as predictors of a higher track placement is very interesting though difficult to explain.

9) Student Attitudes and Climate

a. Aspiration as Dependent Variable

As can be seen in Table 10, level of achievement is directly associated with aspirations and explains most of the variation in this

variable in all classes. Still, in all class-grades, aspiration is associated with teachers' goal preference: an integrative orientation is related to a higher level of aspiration. In 8th grade only, level of class aspiration is also associated with level of school selectivity: the higher the selectivity the higher the student aspiration.

Table 10: Regression of Aspirations on Achievements and Climate Variables in 7th, 8th, 9th grades (for the Entire Class Population)

	7th grade		8th grade		9th grade	
Variables	B	R^2	B	R^2	B	R^2
Achievement	.71*	.534	.87*	.737	.81*	.651
Selectivity	-.00	.000	.14*	.012	.01	.000
Teachers' Education	-.08	.000	.01	.000	-.06	.002
Goal Preference	-.22*	.034*	-.17	.014	-.15*	.015
Authoritarian Attitude	.00	.001	.02	.001	-.12	.002

*$p < .05$ level

Table 11

The separate analyses by grade level and class composition (Table 11) produced a complex picture. The table should be looked at vertically (class grade) and horizontally (class composition). The classic association between level of achievement and level of aspira-

Table 11: Regression of Aspirations on Achievement and Climate Variables in Three Class Compositions (7th, 8th, 9th Grades)

Variables	Up to 40% AA B	Up to 40% AA R^2	41-80% AA B	41-80% AA R^2	81+% AA B	81+% AA R^2
7th Grade						
Achievement	.56*	.319*	.99*	.370*	.27*	.053
Selectivity	.15	.010	-.11	.023	--	--
Teachers' Education	.19	.028	.08	.007	-.27	.046
Goal Preference	.03	.001	-.13	.000	-.32*	.102
Authoritarian Attitudes	-.21	.009	-.11	.005	-.13	.014
Total R^2		.368		.406		.215
8th Grade						
Achievement	.39*	.313*	.68*	.515*	.81*	.448*
Selectivity	.25	.023	.33*	.036	.34*	.016
Teachers' Education	.38*	.067*	.06	.009	-.02	.000
Goal Preference	.17	.019	-.22	.010	-.50*	.183*
Authoritarian Attitudes	.11	.132*	.21	.015	-.31*	.043*
Total R^2		.552		.583		.690
9th Grade						
Achievement	.09	.006	.82*	.604	.60*	.274*
Selectivity	.22	.015	.15	.005	.03	.000
Teachers' Education	.47*	.209*	-.13	.007	-.18	.029
Goal Preference	.09	.005	-.37*	.016	-.25	.047
Authoritarian Attitudes	.19	.170*	.27*	.017	-.21	.016
Total R^2		.406		.651		.361

*$p < .05$ level

tions transpires again, but with some interesting modifications. First, in classes with fewer AA students (up to 40%), the association between achievement and aspirations diminishes from the 7th to the 9th grade. It appears as if in the 9th grade mean class aspiration is not related to its level of scholastic achievement. This point is emphasized by the opposite trend in homogeneous classes at the other end of the scale (80%+ AA) where the association is weaker in the 7th grade and much stronger in the 8th and 9th grades. Teachers' level of education appears to be positively associated with aspiration in classes with up to 40% AA students, an association which becomes stronger in the higher grades.

In heterogeneous classes (41-80% AA) aspirations are associated with teachers' preferences for integration, while teachers' authoritarian attitudes and their level of education have a negligible association with student aspiration. This is a most important point, since heterogeneous classes are one of the main structural means of desegregating students. The association between teachers' integrative orientation and level of aspirations, which appears mainly in heterogeneous classes, is thus worth noting.

In the third type of class composition (80%+ AA), student aspirations are also associated with teachers' preference for integration and with liberal pedagogical approaches. This may be an indicator that such teachers' attitudes are more suitable for this group.

Interestingly, school selectivity has the strongest association with aspiration in the 8th grade, for all class compositions. It may be that in the 7th grade selectivity as school policy has not yet a strong impact on students, and their attitudes are based more on personal variables. It peaks in the 8th grade, and in the 9th grade the impact is reduced. This may imply that school policy as a variable of school climate has the greatest impact in the intermediate grades; i.e., it does not have a cumulative but rather a curvi-

linear shape. This is in contrast to the theoretical suggestions analyzed above. In any case, this is an interesting line of investigation that should be pursued.

b. Plans for Academic High School as Dependent Variable**

While aspirations - in the former analysis - is an index of educational and occupational aspirations, we deal here with plans for academic high school. Both are indications of students' aspirations, but the former indicates long term aspirations which, as mentioned, includes occupational aspirations. The latter is a short-term variable relating to a choice that the students will have to make within two years (for 7th graders) or within a few months (for 9th graders).

Table 12: Regression of Percentage Who Plan Academic High School on Achievement and Climate Variables in 7th and 9th Grades

Variables	7th grade B	7th grade R^2	9th grade B	9th grade R^2
Achievement	.49*	.285	.70*	.503
Selectivity	.25*	.032	.17*	.015
Teachers' Education	.11	.008	.05	.002
Goal Preference	-.23*	.029	-.18	.018
Authoritarian Attitudes	.10	.006	.07	.003

* $p < .05$ level

** In Israel, matriculation exams and the certificate accompanying them are prerequisites for academic studies and for many occupational positions. The passage through academic high school is planned to prepare students for these exams and the probability of a student acquiring the matriculation certificate is, thus, much greater if he studies in such a school.

Two trends seem worth noting in Table 12. First, direct plans to continue academic high school is, of course, associated with achievement level, but the association grows stronger from the 7th to the 9th grade unlike that with the former, general variable of aspiration. A possible explanation to this is that students' plans in the 9th grade for further academic high school are based on reality, i.e., their level of achievement in the 9th grade, which is only a few months away from high school. Secondly, plans for academic high school are associated with lower level of school selectivity. Two explanations can be offered. First, this relationship (low selectivity - high percentage of academic high school plans) is an artifact of the correlation between selective policy and percentage of AA students. The second possibility is that this is a real impact of school policy: when students are not sorted and differentiated during their middle school period (low selectivity) a higher percentage of them continue planning for academic high school.

On the other hand, as was mentioned above (Table 9), the actual placement in academic high school seemed to be related to a higher degree of selectivity. This may occur due to the process of dropping out or transferring weak students from the school as part of the selective policy, a process which affects the students' composition. In any case, if non-selective policy increases students' high school plans while in reality their eventual placement is on the average lower, this may cause frustration among students whose plans could not be realized.

The following (Table 13) presents separate regressions in each of the compositional types.

Table 13: Regression of Students Who Plan for Academic High School and Climate Variables in Three Class Compositions (7th and 9th Grades)

Variables	Up to 40%		41-80%		81+%	
	B	R^2	B	R^2	B	R^2
7th Grade						
Achievement	.20	.033	.37*	.239	--	--
Selectivity	.71*	.231	.34	.045	-.05	.001
Teachers' Education	.55*	.213	.06	.044	-.26	.027
Goal Preference	.04	.001	-.44	.009	-.17	.026
Authoritarian Attitudes	.37	.029	-.05	.002	.15	.027
Total R^2		.507		.339		.081
9th Grade						
Achievement	-.07	.004	.18*	.360	.63*	.259*
Selectivity	.34	.114*	.38	.022	-.17	.132*
Teachers' Education	.64*	.358*	.08	.003	-.54*	.094*
Goal Preference	.09	.007	-.39	.024	-.33*	.072*
Authoritarian Attitudes	.04	.001	-.12	.007	.32*	.048*
Total R^2		.484		.416		.605

*significant at $< .005$

In the homogeneous classes with up to 40% AA origin students it seems that there is almost no connection between achievement and percentage of students planning to go on to academic high school. The possibility that this is a result of little variance in the dependent (plans for academic high school) or the control (achievement) variables must be rejected (see Tables 4 and 6 above). The strong association with teachers' level of education both in the 7th and 9th grades may be partly due to its colinearity with achievement. In these classes there also appears a strong relationship with school policy, i.e., the higher the degree of selectivity the higher the rate of academic high school plans. In the heterogeneous classes, with 41-80% of AA students the main association is between students' level of achievements and aspirations, i.e., the higher the level of class mean achievement the higher the percentage of students planning academic high school. There is also a tendency of schools with stronger selective policies and teachers' integrative orientation to be related to a higher percentage of students planning academic high school. This is not statistically significant, but consistent for the 7th and 9th grades. Interestingly, in classes with 81%+ AA students there is no association between any of the variables and level of aspiration in the 7th grade. However, an association becomes quite evident in the 9th grade, the last year before high school. The main association is between achievements and aspirations. But, beyond it, we can observe the complex association between aspiration and lower teachers' education, less selectivity, integrative orientation and a more authoritative pedagogic approach.

If any comparison between classes according to student composition can be made, then in the "good" classes, higher teachers' level of education and stronger selective processes are related to higher percentage of students planning academic high school. The opposite occurs in the "poor" classes, where low selectivity combined with authoritative pedagogical approaches seems to be related positively to the dependent variable.

c. Locus of Control as Dependent Variable

The results of the analyses of locus of control and climate are shown in Tables 14 (for the entire population) and 15 (by class composition) below.

Table 14: Regression of Locus of Control on Achievement and Climate Variables in 7th, 8th, 9th Grades

Variable	7th grade B	7th grade R^2	8th grade B	8th grade R^2	9th grade B	9th grade R^2
Achievement	.79*	.658*	.82*	.699*	.73*	.586*
Selectivity	.14*	.011	.11	.007	.07	.002
Teachers' Education	.03	.000	.04	.001	.04	.001
Goal Preference	-.17*	.015	-.10	.006	-.14*	.015
Authoritarian Attitude	-.04	.001	-.20*	.035*	-.15*	.029

*$p < .05$ level

Not surprisingly, locus of control is positively associated with level of achievement in all grades. Worth noting is the finding that both preference for integration (a more integrative as opposed to achievement orientation) and a less authoritative pedagogical approach are associated with an internal locus of control. We have here signs that teachers' integrative orientation and more progressive pedagogical approaches encourage the development of internal locus of control.

Table 15: Regression of Locus of Control on Achievement and Climate Variables in Three Class Compositions (7th, 8th, 9th Grades)

Variables	Up to 40% AA		41-80% AA		81+% AA	
	B	R^2	B	R^2	B	R^2
7th Grade						
Achievement	.04	.001	.80*	.777*	.51*	.268*
Selectivity	.34	.040	.13	.019	.07	.047
Teachers' Education	.53*	.144*	.20	.017	-.11	.008
Goal Preference	.23	.037	.04	.000	-.26*	.066*
Authoritarian Attitudes	-.76*	.132*	-.03	.000	.11	.006
Total R^2		.354		.814		.395
8th Grade						
Achievement	.30	.067	.70*	.696*	.76*	.508*
Selectivity	.10	.004	.20	.019	.08	.002
Teachers' Education	.33*	.144*	.23*	.046*	.02	.000
Goal Preference	.02	.000	-.10	.006	-.13	.012
Authoritarian Attitudes	-.48*	.108*	-.03	.000	-.25	.035
Total R^2		.323		.768		.561
9th Grade						
Achievement	-.15	.021	.68*	.605*	.64*	.303*
Selectivity	-.34*	.147*	.14	.017	.18	.011
Teachers' Education	.46*	.095*	.19	.020	.04	.001
Goal Preference	.25	.029	--	--	-.31*	.071*
Authoritarian Attitudes	-.08	.002	-.04	.000	-.30*	.031
Total R^2		.294		.643		.417

*$p < .05$ level

As can be seen from Table 19, there is no significant relationship between achievement and locus of control in the high homogeneous classes (up to 40% AA students), while such strong association continues to appear for the other classes. The lack of association in the former may occur due to the low variation in locus of control in these classes. In these classes (up to 40% AA students) teachers' level of education and non-authoritarian attitudes and in 9th grade low selectivity as well, are positively related to locus of control.

As already mentioned, the strong relationship between teachers' education and locus of control in this class composition should be cautiously interpreted, especially in light of the low association between control and achievement. This may happen due to the colinearity between teachers' education and class achievement and not a real effect of the level of education on students' control. In classes with 81+% AA students integrative orientation and non-authoritarian attitudes (as a trend) are the variables related to locus of control. In the mixed classes all these associations are very small and it is mainly the class achievement which is related to control.

What can be summarized from these analyses is, first, that there are enough indications to imply the possibility of climate effect on students' locus of control, beyond the effect of achievement, and secondly, that the effects of various climate variables/teachers' attitudes are differential in different class compositions and grade levels.

d. Academic Self-Image as Dependent Variable

Regressions of class academic self-image on achievements and the climate variables in 7th, 8th and 9th grades indicate almost no relationship between the dependent and the independent variables (Table 16).

Table 16: Regression of Self-Image on Achievement and Climate Variables in 7th, 8th, 9th Grades

	7th grade		8th grade		9th grade	
Variable	B	R^2	B	R^2	B	R^2
Achievement	-.08	.000	-.42*	.106	.02	.000
Selectivity	.02	.000	.11	.001	.05	.002
Teachers' Education	.04	.001	.34*	.065	.01	.002
Goal Preference	-.17	.027	.18	.011	.00	.001
Authoritarian Attitude	-.15	.038	.13	.022	-.04	.001

*p < .05 level

The same regressions in the three types of class compositions reveal mixed findings (Table 17).

It seems though that while in the low-homogeneous classes (81+% AA), self-image is not related to any of the independent variables, in the high-homogeneous classes self-image raises with level of achievement and with school selective policy. This is no consistent relationship between self-image and achievement in the heterogeneous classes, but the trend of positive relation with school selectivity also appears here.

Self-image is an attitude which seems to be determined comparatively. By comparing one's relative position, either internally - within the class, or externally - between classes or schools, the student locates himself on a scale of status and accordingly develops his academic self-image (Dar and Resh, 1981). The consistent positive relationship in the high-homogeneous class may be due to external comparisons using the school as a frame of reference.

School selective policy is positively associated with self-image, in both the high-homogeneous and the mixed classes (as a trend). It seems that selectivity as the school policy emphasizes the differences among classes and it becomes a message to the students placed in "good" classes which affects their self-image. In any case, self-image is an affective variable which, at least on the class level, does not seem to be strongly affected by school climate variables, as defined in this study.

Table 17

e. Anxiety as Dependent Variable

Anxiety is the last of the affective variables for which the effect of school climate was tested. This, together with the former variable (academic self-image), are considered variables which indicate the level of the students' well-being in the class. While locus of control and aspirations are fairly established as achievement-related variables, the possible effect of these two variables on achievement is highly questionable. Still, in the eyes of many educators the well-being of the student has a merit of its own that should not be disregarded in any learning situation.

Tables 18 and 19 present the findings of the regression analyses regarding anxiety for the entire class population and for the various class compositions respectively.

Table 17: Regression of Self-Image on Achievement and Climate Variables in Three Class Compositions (7th, 8th, 9th Grades)

Variables	Up to 40% AA		41-80% AA		81+% AA	
	B	R^2	B	R^2	B	R^2
7th Grade						
Achievement	.48*	.159*	.24	.033	-.11	.011
Selectivity	.08	.002	.18	.005	--	--
Teachers' Education	.09	.003	-.24	.019	.03	.001
Goal Preference	.04	.001	-.71*	.164*	-.24	.052
Authoritarian Attitudes	-.35	.069	.14	.011	-.25	.061
Total R^2		.234		.233		.126
8th Grade						
Achievement	.29	.078*	-.35*	.099*	-.27	.050
Selectivity	.36	.265*	.23	.062	-.25	.012
Teachers' Education	-.20	.027	.60*	.059	.15	.046
Goal Preference	-.20	.011	.23	.010	.17	.017
Authoritarian Attitudes	.27	.008	.22	.078*	.16	.012
Total R^2		.390		.308		.136
9th Grade						
Achievement	.42*	.089*	-.03	.001	.17	.026
Selectivity	.53*	.217*	.29	.033	-.07	.002
Teachers' Education	-.24	.076*	.14	.068*	-.08	.003
Goal Preference	-.11	.008	-.45	.009	-.29	.061
Authoritarian Attitudes	-.16	.004	.49*	.063*	-.34	.109
Total R^2		.394		.174		.201

*$p < .05$ level

Table 18: Regression of Anxiety on Achievements and Climate Variables in the 7th and 9th Grades

Variable	7th grade		9th grade	
	B	R^2	B	R^2
Achievement	-.40*	.122	.16	.008
Selectivity	.04	.000	-.07	.001
Teachers' Education	.13	.010	-.10	.005
Goal Preference	.02	.000	.14	.020
Authoritarian Attitudes	.05	.002	.15	.034

*$p < .05$ level

As can be seen from Table 18, there is no significant relationship between climate variables and class anxiety. It is interesting to note that in the 9th grade, even achievement is not related to the level of anxiety. Probably, the younger age and especially the fact that this was the year of transference to the middle school account for the strong relation between achievement and anxiety in 7th grade.

The possibility of differential effect of climate in the different class compositions is tested in Table 19 below.

Table 19

The general finding is again of many non-significant relationships and especially in the low-homogeneous classes where only achievement (and in

Table 19: Regression of Anxiety on Achievement and Climate Variables in 7th and 9th Grades and in Three Class Compositions

Variables	Up to 40% AA origin B	R^2	41-80% AA origin B	R^2	81+% AA origin B	R^2
7th Grade						
Achievement	-.12	.013	.18	.015	-.43*	.181*
Selectivity	.08	.003	-.39	.041	.16	.017
Teachers' Education	.51*	.139	.18	.051	.03	.001
Goal Preference	.18	.015	.75*	.083	-.10	.010
Authoritarian Attitudes	-.25	.020	-.23	.023	--	--
Total R^2		.191		.175		.208
9th Grade						
Achievement	.07	.004	.33	.069*	.11	.018
Selectivity	-.82*	.097*	--	--	--	--
Teachers' Education	.13	.154*	-.13	.007	-.12	.023
Goal Preference	-.19	.022	.26	.155*	.09	.006
Educational Attitudes	.73*	.185*	.21	.028	.07	.003
Total R^2		.463		.260		.052

*$p < .05$ level

7th grade only) is related to anxiety. There are, though, a few exceptions which are of consequence. In the heterogeneous classes teachers' integrative orientation seems to be a conducive attitude with regard to anxiety: both in 7th and 9th grades anxiety is lower the more integrative oriented the teachers are. The opposite trends of the relation between teachers' authoritarian attitudes and anxiety in 7th vs. in 9th grade (although significant in 9th grade high-homogeneous classes only) is also worth noting. In the 7th grade the authoritarian attitudes are associated with low anxiety while the opposite appears in the 9th grade. The strong relation which appears between selectivity and anxiety (high selectivity-low anxiety) could be also interesting, but the fact that it appears significantly only once (9th grade, high-homogeneous classes) and that in practice we know that few such schools are highly selective (Chen, Lewy and Kfir, 1976) cause us not to put much weight on this finding.

10) Differential Effect of Climate on Classes' Attitudes in Various Levels of School Selectivity

The process of students' selection and placement within the school is an important operative indicator of school policy, particularly in the setting of the Israeli middle school where integration is a major goal. Using selective mechanisms such as creating more homogeneous classes within the school and letting a relatively high percentage of students drop out (or transfer) from the school, are measures which were clearly against the general educational policy. Selectivity was found to be higher in religious schools and in schools with a high percentage of AA students (correlated variables) (Chen, Kfir and Lewy, 1976). Up to now, selectivity has been considered as one climate variable. However, the importance of this dimension as an overall policy factor endorses the assumption that the other climate variables might be differently associated with class attitudinal outcomes in different policy settings. Hence, regression analyses were carried out separately according to the three levels of school selectivity (in the

three grade levels), with the other climate variables as independent and class attitudes as the dependent ones.* As before, class level of achievement was controlled. Tables 20-23 below present the findings of the regression analyses for aspirations, percentage planning academic high school, locus of control and self-image, respectively.

a. Selectivity, Climate and Aspiration

Table 20

Overall, aspiration is, of course, closely associated with achievement in all classes and all policy settings.

Only in medium selective schools, in all grades, teachers' preference for integration is associated with higher student aspirations. The associations between teachers' level of education and students' aspirations have different, and intriguing, patterns in the various selectivity levels and grade levels, for which possible explanations seem to us premature.

b. Selectivity, Climate and Percentage of Students Planning Academic High School

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Table 21

As can be observed and expected, the best predictor of plans for academic high school is students' achievement. This association is generally stronger in the 9th grade. Another general trend appears

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*Ideally, we would separate the sample by the three class compositions as well, but due to the small sample we did not feel that this could be done.

Table 20: Summary of Regression Analyses of Aspirations in 7th, 8th, 9th Grades in Various Levels of Selectivity

	Low Selectivity		Medium Selectivity		High Selectivity	
	B	R^2	B	R^2	B	R^2
7th Grade						
Class Achievement	.83*	.380	.14	.321	1.07*	.553*
Teachers' Education	-.04	.002	.40*	.032	-.49*	.136*
Goal Preference	-.10	.007	-.29	.144*	.03	.001
Authoritarian Attitudes	-.03	.001	.39*	.036	-.02	.000
Total R^2		.590		.533		.690
8th Grade						
Class Achievement	.80*	.730*	.68*	.705*	.96*	.742*
Teachers' Education	.17	.010	.03	.000	-.16	.018
Goal Preference	.13	.012	-.35*	.113*	-.03	.001
Authoritarian Attitudes	-.12	.010	.12	.012	--	--
Total R^2		.762		.830		.761
9th Grade						
Class Achievement	.81*	.679*	.79*	.650*	.84*	.570*
Teachers' Education	.24*	.023	-.31*	.041*	-.15	.015
Goal Preference	.04	.002	-.44*	.054*	.10	.005
Authoritarian Attitudes	-.21*	.028	--	--	-.09	.008
Total R^2		.732		.745		.598

*$p < .05$ level

Table 21: Summary of Regression Analyses of % Planning Academic High School in 7th and 9th Grades in Various Levels of Selectivity

	Low Selectivity		Medium Selectivity		High Selectivity	
	B	R^2	B	R^2	B	R^2
7th Grade						
Class Achievement	.61*	.227*	.17	.245*	.75*	.448*
Teachers' Education	.34	.048	--	--	-.14	.008
Goal Preference	-.24	.092*	.53*	.175*	.09	.007
Authoritarian Attitudes	-.32	.068*	.20	.040	-.23*	.054*
Total R^2		.435		.460		.517
9th Grade						
Class Achievement	.09	.049*	.26*	.097*	.88*	.672*
Teachers' Education	.72*	.300*	-.75*	.018	-.10	.005
Goal Preference	.10	.008*	-.58*	.079	--	--
Authoritarian Attitudes	-.46*	.170*	-.29*	.042*	-.12	.018
Total R^2		.527		.236		.695

*$p < .05$ level

in the association between non-authoritarian attitudes and higher percentage of academic high school plans. Similarly teachers' integrative orientation is positively related to high school plan. This last trend is especially significant in medium selective schools. Furthermore for both variables, aspiration and plans for high school, teachers' attitudes seem to be more significant in the situation of medium selectivity.

c. Selectivity, Climate and Locus of Control

Table 22

The expected strong relationship between level of achievement and locus of control is clearly revealed in these analyses, as well. In schools with a high degree of selectivity teachers' progressive approach is related to a more internal locus of control and medium level of selectivity integrative orientation is associated with internal control.

In low selective schools only achievement is related to locus of control: the higher the achievement the more internal the locus of control. This association is reduced in higher grades, undoubtedly as a consequence of age development.

More interesting, in medium selective schools teachers' integrative orientation is also associated with internal locus of control. This complements a similar association with students' aspirations.

In highly selective schools teachers' authoritative attitudes are associated with external locus of control. These observations give us another indicator of the possible differential impact of teachers' attitudes in schools of varying degrees of selectivity. It seems that when school policy is more selective, teachers' favorable attitudes may be a factor in eliciting a more internal control.

Table 22: Summary of Regression Analyses of Locus of Control in 7th, 8th, 9th Grades in Various Levels of Selectivity

	Low Selectivity		Medium Selectivity		High Selectivity	
	B	R^2	B	R^2	B	R^2
7th Grade						
Class Achievement	.92*	.706*	.76*	.763*	.59*	.500*
Teachers' Education	.06	.002	-.27*	.022*	.16	.017
Goal Preference	--	--	-.43*	.066*	.10	.008
Authoritarian Attitudes	-.21*	.027*	--	--	-.20	.021
Total R^2		.735		.851		.546
8th Grade						
Class Achievement	.86*	.690*	.68*	.716*	.87*	.653*
Teachers' Education	--	--	.13	.001	-.11	.007
Goal Preference	.03	.001	-.22	.074*	.12	.011
Authoritarian Attitudes	-.08	.005	.07	.003	-.34*	.109*
Total R^2		.696		.794		.770
9th Grade						
Class Achievement	.79*	.645*	.69*	.631*	.51*	.419*
Teachers' Education	.04	.001	-.03	.000	.20	.027
Goal Preference	.12	.009	-.30	.066*	.02	.000
Authoritarian Attitudes	-.10	.005	.10	.014	-.43*	.150
Total R^2		.660		.711		.596

*$p < .05$ level

d. Selectivity, Climate and Academic Self-Image

From the findings in Table 23 we can conclude the following: First, it seems that in low and medium selectivity there is a negative relationship between achievement and academic image; the higher the achievement the lower the image. This finding tallies with the contention that academic image is being elicited through internal comparisons and it is, thus, lower in "higher" classes. The opposite occurs in highly selective schools. There, the fact that classes are distinctly differentiated according to achievement within the school and students probably make the comparison between classes, i.e., externally, creates this opposite association: high achievement - high image.

Second, in the highly selective schools (and as a trend also in the medium selective ones), teachers' achievement orientation is associated with lower academic image.

Last, in low and medium selectivity teachers' authoritarian attitudes are (mostly) associated with low image and the opposite trend appears in the highly selective schools. All these findings suggest that the relationship between school climate and self-image may be differential when a major component of school policy is differently practiced. It may, though, be just a function of students' composition or of school affiliation.* At any rate, these questions seem worthwhile for further investigation.

e. Summary

The set of regression analyses was carried out in order to investigate the relationships between climate variables and a variety of educational outcomes: achievement and achievement-related attitudes. With the assumption that these relationships

*Selectivity was found to be higher in religious schools and in schools with a high percentage of AA students (Chen, Kfir and Lewy, 1976).

Table 23: Summary of Regression Analyses of Self-Image in 7th, 8th, 9th Grades in Various Levels of Selectivity

	Low Selectivity		Medium Selectivity		High Selectivity	
	B	R^2	B	R^2	B	R^2
7th Grade						
Class Achievement	.15	.001	-.48	.049	.34*	.008
Teachers' Education	.33*	.101*	.25	.134*	-.39	.059
Goal Preference	-.13	.012	-.19	.006	-.34*	.129*
Authoritative Attitudes	-.53*	.143*	-.14	.008	.18	.027
Total R^2		.267		.197		.223
8th Grade						
Class Achievement	-.41*	.100*	-.50*	.319*	-.14	.001
Teachers' Education	--	--	-.27	.005	.30	.048
Goal Preference	-.07	.005	-.18	.011	-.10	.009
Authoritarian Attitudes	.27	.055	-.46*	.109*	.34*	.135*
Total R^2		.160		.444		.193
9th Grade						
Class Achievement	-.48*	.134*	-.26	.121*	.54*	.194*
Teachers' Education	-.03	.001	-.43	.007	-.16	.015
Goal Preference	.27	.074*	-.31	.034	-.35*	.095*
Authoritarian Attitudes	.08	.003	-.50*	.089*	.22	.037
Total R^2		.212		.251		.341

*$p < .05$ level

may be differential for different class compositions in schools with different selective policies, the regressions were carried out separately within three compositional and three selective categories.

The relatively small sample size and the fact that we could not identify the specific teachers of a specific class is a serious limitation of these analyses. Hence, the finding should be viewed cautiously. Still, we feel that in these findings there are enough indications which hint at possible differential processes that work in the different classes.

11) Extreme School Climate: Assumptions and Methodology

The climate variables, empirically defined as mean teachers' attitudes, are diffuse and their association with various students' variables is equivocal. Furthermore, the greater the variance of the school climate index, the vaguer the application of the school climate concept, which may result in lower, insignificant and diffused associations with measured outcomes. Two attitudinal variables were used throughout the analysis of climate: preference of goals and authoritarian approach. One can conceive a situation where the school staff is relatively unified or relatively diverse in its attitudes. In the first case, the climate is homogeneous with regard to the specific attitude; in the second case, it is heterogeneous. If teachers' attitudes are part of the school climate and to the extent it has an effect on students' behavior and attitudes, we can assume that students are exposed to different climates not only as defined by teachers' means but also by the degree of diversification among them. We tried to investigate this possibility by categorizing each of these two climate variables according to both dimensions: level (mean) and degree of homogeneity (variance) of teachers' attitudes. The mean and variance of teachers' attitudes were dichotomized, hence creating four types of climate (see Figure 13) and classes were assigned as experiencing one of these climate types.

Variance	Mean: High	Mean: Low
High	High Heterogeneous b	Low Heterogeneous c
Low	High Homogeneous a	Low Homogeneous d

Figure 13: Types of School Climates According to Mean and Variance

Obviously, cases a and d are the extreme climates. In the first, the climate is characterized by a high mean score and in the second by a relatively low mean score, and both with relatively low variance, meaning a relatively homogeneous setting. The following is an analysis of classes' attitudes in the four climate types according to two teachers' attitudinal variables: goal preference, i.e., integrative vs. achievement orientation, and educational attitudes, i.e., authoritarian vs. progressive pedagogical approaches.

a. Extreme School Climate: Teachers' Goal Preference

From Table 24 it is evident that in schools characterized by high but heterogeneous integrative orientation, classes show consistently higher aspirations, have a higher rate of students who plan for academic high school, a more internal locus of control and lower level of anxiety. In order to improve our insight into this trend we added also attitudes towards school (which were measured only in 7th grade) to the analysis. The trend which appeared was similar. In homogeneous, achievement-oriented climates, the lowest level of aspiration, the lowest rate of academic high school plans, the most external locus of control, the highest level of anxiety

and the least favorable attitudes toward school are observed. Put differently, this analysis clearly shows that schools which are highly and homogeneously achievement oriented are associated with less "preferred" student attitudes. But the more salient point is that not the schools which are highly oriented toward integration (integrative - homogeneous) have a stronger association with "preferred" student attitudes, but rather the schools which are heterogeneously integrative oriented. This finding will be elaborated in the summarizing notes.

b. Extreme School Climate: Teachers' Pedagogical Approaches

With regard to teachers' educational approach, a clear distinction between extreme school climates is observed, quite consistently (Table 25). When teachers' educational attitudes are homogeneously non-authoritarian, classes show a more internal locus of control, higher aspirations, a lower level of anxiety and more favorable attitudes towards the school. The percentage planning academic high school is also relatively high, though not the highest of the four climate categories. The homogeneous authoritarian climate appears to be at the other end of the continuum with respect to all five students' attitudes.

c. Extreme School Climate: Analysis by Class Composition

Although the associations are interesting and might give meaningful insight into the possible effects of school climate, the findings should be considered with caution, since student composition (percentage of AA) may be a mediator which explains these results. This point will be partially examined in the next analysis. Still, the consistency of the association between climate types, categorized by level and variance, and students' attitudes is interesting. Even if we cannot be sure whether there is a causal relation between them, the very fact of such associations means that certain classes are exposed to and experience certain

Table 24: Teachers' Goal Preference and Student Attitudes

Student Attitudes	Aspiration			% Planning Academic High School			Locus of Control			Anxiety			Satisfaction with School
Grade / Climate	7th	8th	9th	7th	8th	9th	7th	8th	9th	7th	8th	9th	7th
Integrative - Homogeneous	15.06	15.10	14.73	42.7	--	34.6	4.32	7.23	9.47	10.97	--	10.03	9.74
Integrative- Heterogeneous	16.47	16.45	16.29	71.4	--	65.8	4.63	9.77	10.01	10.73	--	9.99	9.71
Achievement- Heterogeneous	14.51	15.11	14.57	50.2	--	39.4	4.33	9.29	9.20	11.02	--	10.02	9.12
Achievement- Homogeneous	13.81	14.66	14.53	45.3	--	36.0	4.05	8.69	8.75	11.24	--	10.29	8.92

Table 29: Teachers' Authoritarian Attitudes and Student Attitudes

Student Attitudes / Grade / Climate	Aspirations			% Planning Academic High School			Locus of Control			Anxiety			Satisfaction with School
	7th	8th	9th	7th	8th	9th	7th	8th	9th	7th	8th	9th	7th
Authoritarian-Homogeneous	14.21	15.17	14.15	48.1	--	36.9	4.32	9.12	9.30	11.26	--	10.28	8.89
Authoritarian-Heterogeneous	14.79	15.63	15.51	59.2	--	50.0	4.34	9.16	9.33	10.85	--	10.01	9.13
Progressive-Heterogeneous	13.97	14.56	14.32	46.8	--	38.9	4.21	9.14	9.30	11.05	--	9.95	9.29
Progressive-Homogeneous	16.15	16.08	15.84	57.1	--	46.9	4.53	9.66	9.84	10.77	--	10.02	9.82

climates in terms of their teachers' attitudes.

The finding that, with regard to preference of goals it is the heterogeneous, integrative orientation which is associated with the most "desirable" students' attitudes is especially intriguing. It may indicate that the heterogeneous-integrative atmosphere is the most conducive and the homogeneous-achievement orientation is the least conducive. Is it the case that although integrative orientation seems preferable, it should not be carried to the extreme? Perhaps some mixing of attitudes in this respect (different teachers - different attitudes) is in this case preferred to stimulate students?

As mentioned above, we still have to ask whether these findings vary in different class composition which might again emphasize the different impacts of school climate suggested here.

Table 26 below presents students' attitudes (class means) for five attitudinal variables: aspirations, planning for academic high school, locus of control, anxiety and attitude towards the school. This refers to three class compositions and teachers' goal preference, integration vs. achievement (level and dispersion).

Table 26

The analyses of variance, carried out for each class-grade and class attitude, reveal, as expected, the significant differences in the level of students' attitudes (aspirations, plans for academic high school, control and school attitudes) between the three class compositions. But, beyond this difference, the question in our case is whether teachers' attitudes also make some difference and whether this impact is differential for different class compositions. The findings in this respect can be summarized as follows:

a) In most cases, the heterogeneous integrative orientation of teachers is associated with the most favorable students' atti-

Table 26: Students' Attitudes (Class Means) in Various Class Compositions and by Teachers' Goal Preference Categorized by Mean and S.D. (in parentheses number of classes)

	Up to 40% AA	41-80% AA	81+% AA	Analysis of Variance	F	sig.
		Student Aspirations				
7th Grade						
Integrative-Homogeneous	15.89 (7)	15.40 (9)	13.53 (7)	Class Comp.	39.1	.001
Integrative-Heterogeneous	17.41 (8)	16.87 (6)	13.17 (3)	Teachers' Att.	1.98	.123
Achievement-Heterogeneous	16.35(14)	15.36(17)	12.60(21)	Interaction	.65	n.s.
Achievement-Homogeneous	17.20 (1)	15.47 (3)	12.60 (7)	R = .72	R^2 = .51	
8th Grade						
Integrative-Homogeneous	16.17 (8)	14.76(10)	14.23 (7)	Class Comp.	55.6	.001
Integrative-Heterogeneous	17.20 (8)	16.53 (6)	14.30 (3)	Teachers' Att.	3.5	.02
Achievement-Heterogeneous	16.80(14)	15.32(17)	13.82(21)	Interaction	1.3	n.s.
Achievement-Homogeneous	17.40 (1)	15.97 (3)	13.67 (7)	R = .72	R^2 = .59	
9th Grade						
Integrative-Homogeneous	15.91 (8)	14.93(10)	12.83 (7)	Class Comp.	50.9	.001
Integrative-Heterogeneous	17.16 (8)	16.28 (6)	13.97 (3)	Teachers' Att.	3.7	.014
Achievement-Heterogeneous	16.79(14)	14.88(17)	12.84(21)	Interaction	.52	n.s.
Achievement-Homogeneous	-- (0)	15.63 (3)	14.03 (6)	R = .75	R^2 = .57	
		% in Class Who Plan for Academic High School				
7th Grade						
Integrative-Homogeneous	37.0 (7)	49.3 (9)	31.9 (7)	Class Comp.	33.2	.001
Integrative-Heterogeneous	79.4 (8)	78.0 (6)	36.7 (3)	Teachers' Att.	5.9	.001
Achievement-Heterogeneous	62.8(14)	63.2(17)	31.2(21)	Interaction	1.6	.036
Achievement-Homogeneous	99.0 (1)	43.0 (3)	39.7 (7)	R = .70	R^2 = .49	

Table 26: (continued)

	Up to 40% AA	41-80% AA	81+% AA	Analysis of Variance		
	% in Class Who Plan for Academic High School (contd.)				F	sig.
9th Grade						
Integrative-Homogeneous	43.8 (8)	35.0(10)	24.3 (7)	Class Comp.	22.6	.001
Integrative-Heterogeneous	86.3 (8)	60.0 (6)	23.3 (3)	Teachers' Att.	6.9	.001
Achievement-Heterogeneous	66.4(14)	41.2(17)	20.0(21)	Interaction	2.4	n.s.
Achievement-Homogeneous	-- (0)	56.7 (3)	26.7 (6)	R = .64	R^2 = .41	
	Student Locus of Control					
7th Grade						
Integrative-Homogeneous	4.51 (7)	4.34 (9)	4.06 (7)	Class Comp.	30.7	.001
Integrative-Heterogeneous	4.81 (8)	4.63 (6)	4.13 (3)	Teachers' Att.	2.9	.042
Achievement-Heterogeneous	4.67(14)	4.44(17)	4.02(21)	Interaction	.40	n.s.
Achievement-Homogeneous	4.50 (1)	4.13 (3)	3.97 (7)	R = .69	R^2 = .48	
8th Grade						
Integrative-Homogeneous	9.80 (8)	9.38(10)	8.31 (7)	Class Comp.	42.7	.001
Integrative-Heterogeneous	10.03 (8)	9.95 (6)	8.73 (3)	Teachers' Att.	4.5	.005
Achievement-Heterogeneous	9.79(14)	9.52(17)	8.78(21)	Interaction	.60	n.s.
Achievement-Homogeneous	9.30 (1)	9.00 (3)	8.30 (7)	R = .75	R^2 = .56	
9th Grade						
Integrative-Homogeneous	10.05 (8)	9.49(10)	8.70 (7)	Class Comp.	30.8	.001
Integrative-Heterogeneous	10.25 (8)	10.12 (6)	9.17 (3)	Teachers' Att.	2.3	.082
Achievement-Heterogeneous	10.00(14)	9.75(17)	8.72(21)	Interaction	.41	n.s.
Achievement-Homogeneous	-- (0)	9.07 (3)	8.57 (6)	R = .69	R^2 = .48	

Table 26: (continued)

	Up to 40% AA	41-60% AA	81+% AA	Analysis of Variance	F	sig.
			Student Anxiety			
7th Grade						
Integrative-Homogeneous	10.36 (7)	11.01 (9)	11.69 (7)	Class Comp.	2.70	.07
Integrative-Heterogeneous	10.97 (8)	10.57 (6)	10.40 (3)	Teachers' Att.	.32	n.s.
Achievement-Heterogeneous	10.84(14)	11.17(17)	11.08(21)	Interaction	1.9	.07
Achievement-Homogeneous	9.40 (1)	11.07 (3)	11.61 (7)	R = .269	R^2 = .072	
9th Grade						
Integrative-Homogeneous	9.97 (8)	9.90(10)	10.34 (7)	Class Comp.	.58	n.s.
Integrative-Heterogeneous	10.60 (8)	9.48 (6)	9.40 (3)	Teachers' Att.	.21	n.s.
Achievement-Heterogeneous	9.84(14)	10.13(17)	10.08(21)	Interaction	5.0	.001
Achievement-Homogeneous	-- (0)	10.83 (3)	10.12 (6)	R = .121	R^2 = .015	
			Attitudes towards School			
7th Grade						
Integrative-Homogeneous	10.03 (7)	9.76 (9)	9.40 (7)	Class Comp.	3.1	.05
Integrative-Heterogeneous	9.26 (8)	9.65 (6)	11.00 (3)	Teachers' Att.	1.2	n.s.
Achievement-Heterogeneous	9.94(14)	9.22(17)	8.49(21)	Interaction	2.2	.05
Achievement-Homogeneous	11.20 (1)	8.70 (3)	8.89 (7)	R = .32	R^2 = .104	

tudes, even after controlling class composition. On the other hand, the findings with regard to homogeneous achievement orientation are not as consistent: they are not always associated with the least favorable students' attitudes.

b) Out of the eleven comparisons made, six show a significant effect of teachers' attitude and three, a significant interaction. Although these effects are much weaker than the class composition one, their significance should not be overlooked. The significant main effects are all related to the first three attitudes: control, aspirations and plans for academic high school. Contentwise, they imply that irrespective of class composition, heterogeneous integrative orientation is associated with a more internal locus of control, a higher level of aspiration and a higher rate of plan for academic high school. In this last variable there is also a significant interaction term (significant in 7th grade and not significant, but showing the same trend, in 9th grade) implying that in the disadvantaged classes (over 80 per cent AA students) it is the homogeneous achievement orientation which is associated with a higher rate of academic high school plans. With regard to school attitudes, the trend is not very consistent, but students are more satisfied in an integrative orientation climate than in the achievement oriented one. With regard to anxiety the relationship changes: in "high" classes (up to 40% AA) it is highest when teachers are heterogeneously integrative oriented while such an orientation is associated with low anxiety in the other two compositions. It should be noted that anxiety and school attitudes are much less related to class composition or to teachers' attitudes.

This table shows clearly that the school climate which is characterized by more integration-oriented teachers who are relatively heterogeneous in this attitude is, in most cases, associated with stronger motivation on the part of the students. This is con-

sistent in all class compositions, but it is strongest in heterogeneous classes (41-80% AA). To emphasize this point the following table (27) shows the differences between class attitudes in integrative-heterogeneous and achievement-homogeneous classes. As can clearly be seen, the main differences are in heterogeneous classes.

Table 27: Differences Between Class Means in Different School Climates (Integrative-Heterogeneous vs. Achievement-Homogeneous)

	Up to 40% AA	41-80% AA	81+ AA
		Student Aspiration	
7th Grade	-.79	1.40	.57
8th Grade	-.20	.56	.63
9th Grade	--	.66	-.06
		% in Class Who Plan for Academic High School	
7th Grade	-19.6	35.0	-3.0
9th Grade	--	3.3	-3.4
		Student Locus of Control	
7th Grade	.31	.50	.14
8th Grade	.73	.95	.43
9th Grade	--	1.05	.60

Although the difference in the locus of control variable increases the higher the grade, this tendency does not stand for the other two variables: The differences in student aspiration and percentage planning for academic high school in the various school

climates decrease the higher the grade. To reemphasize one more point, as can be seen in Tables 26 and 27, the highest percentage of students planning for an academic high school in classes with 81%+ AA is consistently in those associated with an achievement-homogeneous school climate. Hence, this supports one of our basic hypotheses, that school climates are differently associated with motivational variables according to class composition, a point that should be examined further.

In order to complete these analyses, we have looked at the distribution of classes exposed to different climates with regard to teachers' goal preference (integration vs. achievement) in different classes by composition. In classes of up to 40% AA, the distribution is 50%-50% between achievement-oriented and integration-oriented teachers; in integrated classes (between 41-80% AA) it is 55%-45% respectively, and in classes with 81+% AA, it is 74%-26%. It seems that there is a tendency of certain teachers with certain attitudes to concentrate in certain classes. Whether this happens because of pre-selection or as a result of the teaching process, one cannot say in this context. However, the trends and the significant associations with student attitudes which are shown in the analysis of this relatively small sample indicate that this avenue of investigation might be worthwhile.

12) Class Composition and Relative Class Position

Up to now we have investigated the relationship between school climate variables and students' achievement and achievement-related attitudes in various class compositions. In this section we attempt to look at relative class position within the school as a factor in student attitudes. A high-homogeneous class (up to 40% AA) may be one of a number of similar classes in a school whose overall student composition is the same. It might also be a "high" class composed in a school with a selective policy, whose overall population composition is 41-80% AA students. Similarly, a heterogeneous class

(with 41-80% AA students) may be one of a few other such classes in a school with the same composition, a "high" selective class in a school whose overall composition is above 81% AA students, or a "low" class in a school with an up to 40% AA students.

Table 28 presents the distribution of classes by their ethnic composition in the various schools' compositions.

Table 28: Class Distribution According to Class and School Composition

School	Classes		
	Up to 40% AA	41-80% AA	81%+AA
Up to 40% AA	24	3	0
41-80% AA	6	26	10
81+ AA	0	1	28
	30	30	38

*For one school information on class composition is missing

The concentration of classes in the diagonal of the table suggests that, at least in these crude categories, most classes represent the composition of the schools' student population. Yet, twenty out of 98 classes (about 20%) deviate from this pattern by being either "higher" or "lower" than the overall composition of their school. Does the relative location of the class within the school have an effect on students' self-perception and on their attitudes and behavior? The "deviation" of a class composition relative to other classes created in the process of sorting is probably relevant both for the students in that class and for those in the other classes.

The relative position of the class may become in itself a message to the students about their evaluation and their educational

prospects as the school defines them, exactly as assigning students into ability groups within each class constitues a message to them about their evaluation and prospects relative to the other students in the class. In that respect, a class comprised of 41-80% AA students in a school where there are less than 40% AA students (and thus having classes composed of less than 40% AA and none of 81%+ AA) may be perceived quite differently compared to the same class in a school with more than 81% AA students. The former is the relatively "low" class in its school context and the latter is the "higher" class relative to the other parallel classes in the school. Such an approach to the investigation of class composition and its effects does not exist yet in the studies of school climate and integration. A possible analogy to such an approach (in studies on the individual level) is in the theory of the "frog pond" and relative deprivation (Davis 1959, Davis 1966, Runciman 1966). The fact that the number of classes which "deviate" in composition from their school composition is almost the same in heterogeneous and low-homogeneous schools tallies with the finding that the most selective schools are those with a religious affiliation and with a high percentage of AA students (Chen, Kfir and Lewy 1976)*

It was not possible to go into a detailed analysis in this study on the possible effects of the class relative position on student behavior and attitudes (mainly due to the small number of classes) but the findings in Table 29 are an enlightened indication of the significance that this phenomenon may have.

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*Considering the width of the ability range in the heterogeneous school compared to that of the homogeneous ones, one would expect that in the former there will be a higher pressure for a greater differentiation of classes.

Table 29: Class Means in Various Students' Attitudes, by School and Class Compositions

Attitude	School Composition / Class Comp.	-40% AA	41-80% AA	81+% AA
7th Grade				
Aspirations	-40% AA	16.79	15.78	--
	41-80% AA	15.67	15.63	15.90
	81+% AA	--	12.65	12.87
Total		16.66	15.01	12.96
% Who Plan for Academic High School	-40% AA	63.5	58.2	--
	41-80% AA	30.3	63.5	57.0
	81+% AA	--	37.1	32.0
Total		59.8	57.2	32.9
Locus of Control	-40% AA	4.68	4.62	--
	41-80% AA	4.33	4.46	3.40
	81+% AA	--	4.07	4.01
Total		4.64	4.40	3.99
Self-Image	-40% AA	15.53	15.15	--
	41-80% AA	14.20	15.76	16.00
	81+% AA	--	15.33	15.85
Total		15.42	15.51	15.86
Anxiety	-40% AA	9.63	9.42	--
	41-80% AA	10.00	10.06	9.97
	81+% AA	--	10.21	10.24
Total		9.63	10.01	10.23

Table 29 (contd.)

Attitude	School Composition Class Comp.	-40% AA	41-80% AA	81+% AA
8th Grade				
Aspirations	-40% AA	16.86	16.33	--
	41-80% AA	15.13	15.46	15.10
	81+% AA	--	13.81	13.94
Total		16.63	15.22	13.98
Locus of Control	-40% AA	9.88	9.63	--
	41-80% AA	9.38	9.57	8.30
	81+% AA	--	8.49	8.64
Total		9.81	9.35	8.63
Self-Image	-40% AA	14.40	15.20	--
	41-80% AA	13.70	15.00	14.00
	81+% AA	--	16.00	16.60
Total		14.30	15.20	16.60
9th Grade				
Aspirations	-40% AA	16.73	16.30	--
	41-80% AA	14.87	15.28	14.20
	81+% AA	--	13.41	13.02
% Who Plan for Academic High School	-40% AA	67.2	58.0	--
	41-80% AA	22.5	47.1	30.0
	81+% AA	--	20.0	23.0
Locus of Control	-40% AA	13.9	14.1	--
	41-80% AA	14.0	14.0	14.5
	81+% AA	--	14.2	13.8
Self-Image	-40% AA	14.72	14.40	--
	41-80% AA	12.25	14.10	13.00
	81+% AA	--	14.50	15.41

Since the ethnic composition of a class is generally an approximation (although not identical) to both its S.E.S. level and its academic level, we refer in our discussion of the finding to classes with up to 40% AA students as "high" and those with 81+% AA as "low" classes. The findings in the table seem to indicate that the relative position of the class in the school is related to its students' attitudes (also expressed by class means).

a. Aspirations: The findings on this variable are mixed. In some cases the relative position of the class seems to have an effect on aspirations, in other cases it seems that the class composition as such - unrelated to its ranking among the classes in the school - does not have an effect and the school composition is the major determinant of mean aspirations.

b. Per cent planning for academic high school: This finding appears also when checking the percentage who plan to go on to academic high school in the various class compositions within the different school compositions. In any case, the differences which do appear as related to the class ranking seem smaller than those which exist between the various classes according to their composition and between schools according to their composition.

c. Locus of control: Here, the classes which are "lower" in relation to their school composition have a more externalized locus of control than similar classes whose composition is the same as their school's. Those differences are greater in 8th grade than in 7th grade and disappear at the end of 9th grade. Still, it is quite clear that both school composition and class composition - within the specific school - are associated with a clear ranking of locus of control.

d. Self-image: The differences in mean self-image among the various schools are very small with a tendency for image to be lower in high-homogeneous schools. This, by itself, is an indication that self-image is probably elicited through a process of internal comparison.

The mean self-image of a class whose composition is "lower" relative to the overall school composition is lower than that of a similar class in a school composition that "fits" the class composition. Thus, for instance, the self-image of a heterogeneous class (41-80% AA) in a school with up to 40% AA is lower than that of the same composition class in a heterogeneous school (41-80% AA). The same is true for classes with more than 80% AA in heterogeneous schools as compared to such classes in schools with similar composition.

e. Anxiety: The dominating factor which affects the level of anxiety is the percentage of AA students, either in school or class, and it is not affected by class ranking in school.

A possible explanation for these findings can be found in considering the normative and the comparative dimensions as educational processes which mediate educational outcomes. In their normative function, reference groups act as norms-definers influencing their members to conform to those norms and behave accordingly. In their comparative function they are used as a scale against which members can compare themselves. Another, maybe complementary explanation is in viewing the class ranking as a symbolic message for its members, which defines for them their position in the system and their future opportunities, and, thus, influence behavior as an outcome of this definition (St. John 1975, Spady 1973, Dar 1980). If the home room class, which in Israel is the most significant educational and social unit, is our unit of analysis, then other classes in the school may serve as a reference for comparison, while the level of the class itself (its composition, in this case) and/or the level (composition) of the school to which the class belongs serves as the normative reference.

In this sense, and in relation to our findings, it seems that the three variables, self-image, locus of control and aspirations,

could be viewed as a continuum of motivational variables when the first (self-image) is effected mainly through an internal comparative process and the latter mainly through a normative process. In the first case, the class's self-image is dependent on its relative position in the school, either through comparing itself with other classes or through the symbolic message that such a position carries. The class's self-image is lower when it is relatively "low" in its school context. Locus of control and aspirations even more, on the other hand, seem to be more affected by the class, or the school, as a normative reference and less by the ranking of the class within the school.

Undoubtedly, we should consider the analysis very cautiously, since it is mainly descriptive. Furthermore, the comparison itself is based on a relatively small sample and quite crude compositional categories. Nevertheless, since this is a relatively new angle of analysis, it seemed worthwhile studying even under these restrictions.

13) Summary and Conclusions

Although learning is a function of individual effort in the school system, it cannot be treated as a separate phenomenon detached from the atmosphere of the whole school. This holds particularly true for the disadvantaged. Here, the teacher's attitude, peer group behavior and school policy in general may turn out to be vitally important components in the learning process. Although school climate is a fundamental phenomenon in educational research it is a highly perplexing one. A survey of the literature clearly reveals that no common conceptual framework or classification of school climate has yet emerged. Each researcher has developed his own concept and definition of the phenomenon; yet essentially, they refer to the same thing: the interrelationships between the individual and the sets of attributes of the environmental unit in which he functions.

In Israel, efforts towards narrowing the cognitive and social gap between pupils have been directed towards integration through structural changes in the educational system, along with expected changes in the educational process as well. School climate is one indicator of the educational process and its effect may be particularly important in the context of the integrated school. Hence, the main purpose of this study is to analyze the relationships between the "school climate" and the different educational outcomes for students in various class compositions, i.e., various integrational situations.

The elements of school climate in this study reflect the quality of teaching input (teachers' level of education) and school educational policy. School policy could be viewed on two levels: First, as reflected through declarations, i.e., staff attitudes toward central components of the learning process; and second, as reflected in actual patterns of the implementation of integration policy. The former is represented in this study by teachers' attitudes toward the main goals of the reform (achievement vs. integration) and their pedagogical

approach (authoritarian vs. progressive). The latter is represented by the level of school selectivity.

The findings reported are based on a secondary analysis of data from the Junior High School Study, which was aimed at evaluating the reform in the Israeli educational system (Chen, Lewy and Adler 1978). It also draws on the conclusions of a case study of five integrated junior high schools (Resh, Adler and Inbar 1980).

The first phase of analysis was carried out on the school level. The central policy of the Ministry of Education regarding the reform explicitly suggests that all formed middle schools will be integrative, that integration will be carried out at the homeroom class level, that the middle school will be attached to a prestigious high school and teachers will be authorized academic teachers. However, the specific demographic and structural situation in each district* limited the possibility of carrying out such a unified policy and resulted in a variety of schools in terms of both their student body and their staff compositions. An SSA analysis based on teachers' variables revealed the existence of two distinctive climates in schools: an achievement-conservative climate and an integrative-open one. These two poles were related also to students' variables: locus of control, aspirations, achievement and anxiety. The elements which consistute the two types of climate were also related to student body composition, revealing that the achievement-conservative climate prevails more in schools with a higher percentage of AA students. One cannot infer from this analysis a causal relationship between climate and students' outcomes (achievement and attitudes). Yet, the mere fact that such relationships exist is important and illuminating.

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*There is an uneven dispersion of the population in terms of both its ethnic and socio-economic composition in various districts. This fact is even more pronounced in the two sub-systems: the secular and the religious public schools.

Moreover, an in-depth case study of five heterogeneous middle schools suggests that differences exist even between schools which are relatively similar in their composition. Schools are given a relatively high degree of autonomy; and school policy, which appears to be determined to a great extent by the principal's orientation, ability, determination and leadership, is related to many facets, e.g., the school climate, the organization of classes, and staff orientations. Knowing that class ethnic composition is not always a mirror of the school composition (as a result of intra-school policy) and hypothesizing that different classes may be differentially sensitive to school climate, we moved in the second phase to a set of analyses on the class level. The class ethnic composition gave us explicit information on the percentage of AA students in the class, but the high correlation, on the aggregate level, between ethnic, socio-economic and intellectual composition, suggests that the different classes represent different educational environments for their students. It is important to learn about the relationship between school climate and various educational outcomes in such varying class environments.

The analysis of variance between the three class compositions (up to 40% AA, 41-80% AA, and above 80% AA students) and the correlational analysis in these three class types, revealed different associations between teachers' variables in the various class compositions and differences between class compositions in students' variables. These were the first indications that different educational processes may be taking place in various classes and that it may be worthwhile to analyze them separately.

Regression analyses of academic achievement on climate variables - for the entire class population and by class composition - did not produce very meaningful findings. Taking into account the tight control on previous achievement and on class composition together with the fact that climate effects are usually not very strong, this is

quite understandable. Still, it is interesting to note that in classes with less than 40% Afro-Asian students the explanatory power of climate increases as grade level rises.

Further regression analyses were carried out (in the above manner) on classes' attitudinal variables: aspirations, plans for high school, locus of control, self-image and anxiety. Findings suggest that level of aspiration and plans for high school are related to teachers' integrative orientation, and locus of control was more internal with the more integrative oriented teachers. There are also indications that classes may be differentially sensitive to the effects of school climate in different grade levels and according to their ethnic composition. For example, aspirations are more related to school climate in the 8th and 9th grades than in the 7th grade. In classes with up to 40% AA students, teachers' integrative orientation is not related to class aspirations, while in the other two compositions it is relevant. The more integrative oriented the teachers are, the higher the level of aspirations. A similar trend appears with regard to plans for academic high school.

The relationships between classes' attitudes and climate were also analyzed separately in the three types of school selectivity - the measurement of actual school policy. The findings were not very consistent, but there were indications that the effect of climate is different in the various policy contexts and that it is strongest in schools with medium level selectivity. It may be that when school policy is carried out in an extreme and clear-cut fashion, this in itself defines the climate, while in the less clear situation - medium selectivity - other climate variables are more relevant and have thus an effect on students' attitudes.

A different approach to climate was used in a further analysis. Here, we assumed that not only the <u>mean level</u> of teachers' attitude is relevant but also its <u>variance</u>. Whether the school staff is more

unified in their educational attitudes or more diversified in their opinions, may be relevant to the climate created in the school and to a degree also have different effects on classes. Thus, each of the two teachers' attitudinal variables (goal preference and authoritarian vs. progressive approach) were categorized both by level and by variance. This created four climate categories for each of these variables: high-homogeneous, high-heterogeneous, low-homogeneous, and low-heterogeneous atmosphere.

In relating these categories to students' attitudes, it appears that a more unified (homogeneous) progressive attitude in the school is associated with a higher degree of internal control, higher level of aspirations, less anxiety and a more positive attitude toward teachers and school. At the other end of the continuum, in terms of these students' attitudes, was the homogeneous-authoritarian category.

As far as the "goal preference" is concerned it seems that variation in teachers' attitudes, which on the average tend to be more integrative oriented, is the most conducive climate, and the homogeneous-achievement orientation is the least conducive climate in terms of students' attitudes. These findings are quite consistent but it seems to be stronger in heterogeneous classes (41-80% AA).

In the last analysis, an entirely different approach was applied. Teachers' variables as indicators of climate were altogether disregarded. Instead, relative position of the class within the school was related to students' outcomes. Since about 25% of our classes had a different composition than the school composition, we could determine their relative position in the school ("higher" or "lower" relative to the other classes in the same school). The findings suggest that the relative position of the class distinguishes between classes' outcomes mainly with regard to self-image and locus of control and, to a lesser extent, to aspirations. Probably class location within the confines of the school carries a message in itself

which may affect students' attitudes and behavior. The effect for self-image is different than that for the other attitudes, indicating that the first is probably affected through comparative reference, while the latter are more affected through normative references.

Although teachers' variables were not used in this analysis, the very fact that classes in the same school are differentially composed is an indicator of school policy which probably has implications for a wider range of educational processes in the school. Schools which formed more homogeneous classes usually tend also to use other selective mechanisms (grouping and streaming) excessively. Teachers' accountability for various groups of students becomes differential and in many cases the teaching process within the classes is differential, catering mainly to the "better" classes with the more promising students.

It should be remembered that in the whole set of analyses students' outcomes are measured as classes' means. On the one hand, any significant relationship found between climate variables and classes' outcomes is meaningful; it means that school policy and teachers' educational attitudes have some effect on these classes. On the other hand, such an analysis does not allow any specification of the relationships between climate and a specific group of students in a specific class situation (for instance, disadvantaged students in a heterogeneous class).

The findings seem to produce some evidence that question the uni-effect of school climate in all class contexts. It may very well be that school climate has a differential effect on different types of classes (by grade and composition), on the one hand. On the other hand, class composition in a certain school context (class relative position) is in itself an outcome of school policy and may constitute a symbolic message to the students affecting, as a result, their attitudes.

This line of investigation would be worthwhile in future research with less restricted data and better design which the secondary analysis in this case could not afford. Further research in this direction should be based on a much more intimate knowledge of the unique organizational context of each school, as in the five case studies of Resh, Adler and Inbar (1980).

Two more points should be emphasized for future reference. First, the generalized approach toward school climate tends to overlook the degree of heterogeneity of climate, i.e., the degree to which school climate is an homogeneous phenomenon which reflects the attitudes and behaviors of all or most of the participants concerned. It is a combination of more than one set of coherent attitudes. In our case, it can be seen in the differential approach toward the main goals of the educational reform (achievement vs. integration).

Second, and this complements the above line of thinking, an analysis of the effects of school climate should be dealt with in a longitudinal approach. Undoubtedly this might create great difficulties to further research, but the trends revealed in this study imply that school climate might have changing effects with time.

Appendix 1: The Variable List

A. Teachers' and School's Variables

Variable's Name	Description of the Variable	Variable range
1. Selectivity	A school variable. An index composed of 2 dichotomous items: drop-out rate and the degree to which homeroom classes are homogeneous.	1 - low selectivity 3-2 - high selectivity
2. Teachers' Level of Education	School's mean of teachers' education.	1 - low 27 - high
3. Teachers' Preference of Educational Goals	An index constructed from teacher's answer about the degree of importance which he relates to the educational goals of the reform.	(-3)- integrated oriented (+3)- achievement oriented
4. Authoritarian Attitude	A composite index of 5 items referring to required homework, punishment, discipline, involvement in students' decisions, etc.	1 - progressive 5 - authoritarian
5. Progressive Attitude	A composite index of 6 items which refer to educational approaches such as encouragement of students' initiative, leadership, criticism, independence, participation in decisions, etc.	1 - conservative 5 - progressive
6. Satisfaction in Work	A composite index of 5 items on teacher's level of satisfaction in his work.	1 - low satisfaction 5 - high satisfaction
7. Perception of Problems in School	An index composed of 13 items referring to teacher's perception of the degree to which various problems exist in his school (students' background, discipline).	1 - very difficult problem 4 - no problem

B. Students' Variables

Variable's Name	Description of the Variable	Variable range
1. Locus of control	The individual's sense of controlling his destiny. The index was constructed of 3, 6, 6 questions in 7th, 8th and 9th grades respectively.	3-6 - 7th grade 6-12 - 8th grade 6-12 - 9th grade low - external high - internal
2. Academic Self-image	Based on 4 questions referring to the student's image of his academic performance.	4-24 - 7th grade 1-6 - 8th grade 1-6 - 9th grade low - very weak high - excellent
3. Anxiety	A composite index of 8 questions, based on Sarason's school anxiety questionnaire (1960).	8 - low anxiety 16 - high anxiety
4. Aspirations	A composite index based on questions about the student's educational and occupational aspirations.	4-19 - 7th grade 4-17 - 8th grade 4-17 - 9th grade low - low aspiration high - high aspiration
5. % Who Aspire to Continue in Academic High School	The percentage of students in the class who plan to continue their studies (after middle school) in academic high school.	
6. Satisfaction with school	A composite index of 4 questions related to the student's satisfaction with social life and the learning situation in his school.	4 - not satisfied 12 - satisfied
7. Achievements	The mean achievement (% of correct answers) in six standardized tests.	
8. Placement in High School (PHS)	The type of high school in which the student is studying in 10th grade (retrieved from the follow-up of the students after they moved to high school).	1 - does not study does not work 5 - academic high school

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